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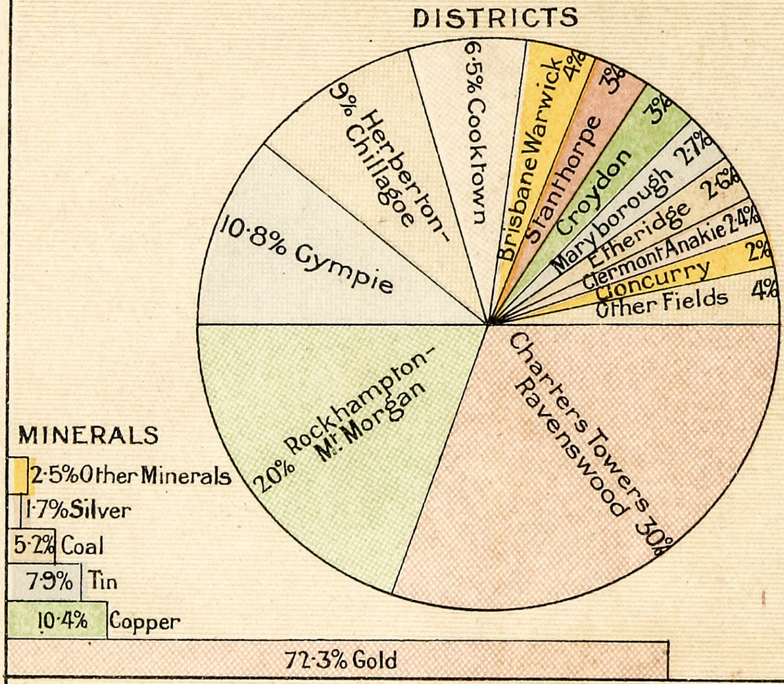
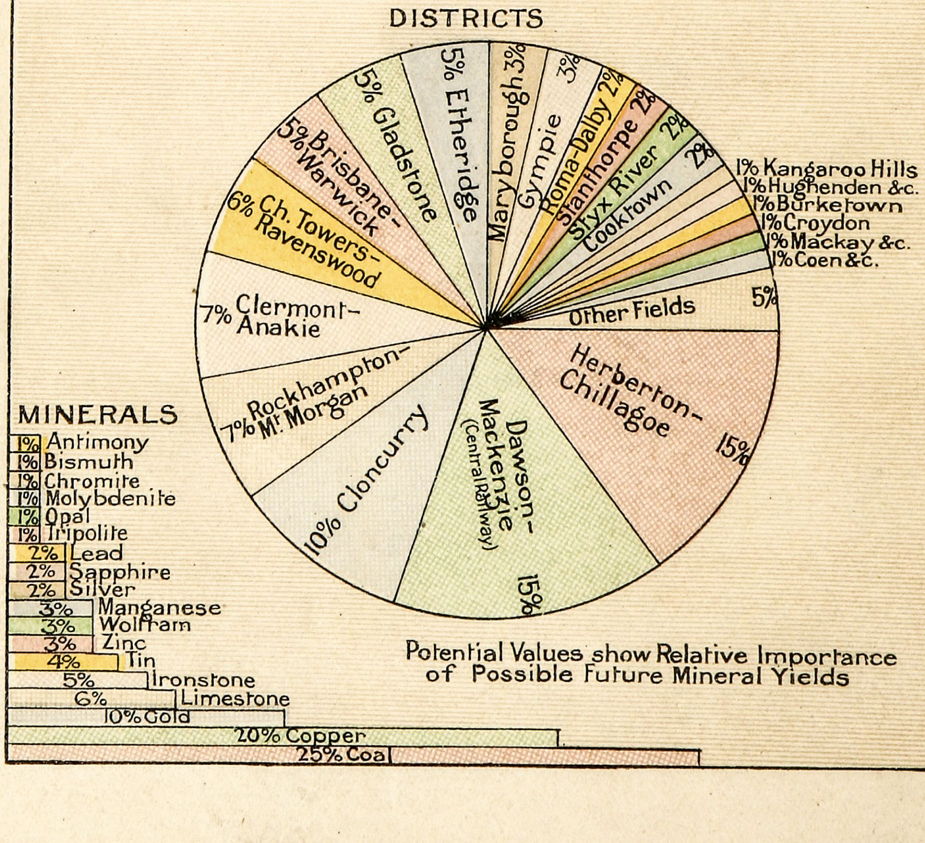
ACTUAL MINERAL PRODUCTION

Values in Percentages



POTENTIAL MINERAL VALUE

In Percentages



Potential Values show Relative Importance of Possible Future Mineral Yields

Queensland.

DEPARTMENT OF MINES.

QUEENSLAND GEOLOGICAL SURVEY.
Publication No. 241.

QUEENSLAND MINERAL INDEX
AND GUIDE.

With Numerous Diagrams and Tables, and an
Atlas of 36 Maps,

BY

B. DUNSTAN,

GOVERNMENT GEOLOGIST.

Issued under the Direction of

The Hon. J. G. APPEL. Minister for Mines.

BRISBANE:
By Authority: Anthony James Cumming, Government Printer.

1913.

INTRODUCTION.

The State of Queensland, including the islands on the eastern coast and in the Gulf of Carpentaria, contains within its boundaries an area of 673,040 square miles, of which 78,000 square miles are officially reserved as gold and mineral fields, 73,000 square miles are made up of coal measures, 40,000 square miles are opal-bearing, while 250,000 square miles have been proved to contain enormous supplies of artesian water.

Throughout the whole of the eastern portion of the State gigantic belts of country carrying a variety of minerals are known to exist, and extend northerly from the border of New South Wales to the extreme point of Cape York Peninsula, a distance of over 1,500 miles, while another large area, principally containing copper, occurs on the extreme western side.

The prospecting operations undertaken in the past have been within confined areas, but sufficient has been done to indicate that many portions, specially in the northern districts, are extremely rich in minerals of commercial value, and offer great financial attractions to those interested in the development of mineral deposits.

For the purpose of systematising the information collected about known mineral occurrences, the compilation of a card index of minerals was undertaken by myself, unofficially, in 1901, and was continued in connection with the Queensland Geological Survey two years after. Since then the accumulation of data has been carried on laboriously and persistently year after year, until the number of references to minerals and localities has reached many thousands. In 1906 the necessity of having the index put into a form for general use became apparent, and the work was modified with that object in view, although it was only after a personal inquiry into the merits of the work by the Hon. J. G. Appel, Minister for Mines, that in 1910 sanction was given to have it prepared for publication. Thereafter, very close attention was given to the modelling of the card index matter to adapt it to book form, and arrangements were made to have a series of maps and diagrams prepared as accompanying illustrations.

Notwithstanding the care taken in collecting and cataloguing the information, and also in eliminating errors, many minor irregularities will be found both in the text and plates, but the Index is the first of its kind ever produced, and the methods adopted in arranging the matter have been on quite original lines. Some of these defects were only noticed after portions of the text had been printed, and then too late to be remedied.

The Index is principally a guide or ready reference to all that is known concerning the mineral wealth of the State, and to make it as complete as possible, 10,000 mineral references and cross-references have been included, which, with other locality references and cross-references, make up a total of about 18,000 entries. In addition to this, 3,000 duplicate entries were written as the result of taking the mineral references in several unofficial publications as original sources of information, which afterwards were found to be only a repetition of previously published information in our own geological reports, and had to be discarded.

The mineral entries are given in alphabetical order, and are also numbered from 1 to 8,236, but many entries have been inserted since this long task was completed, and alphabetical subdivisions of some of the numbers have been necessary.

Most of the mineral entries have been taken from the published reports and record cards of the Survey, and the references to authorities at the end of each entry will be a guide to the source of the information and to the value which may be given to the data, while those which have no references may be considered to be of doubtful accuracy.

During the checking and revising of the proofs a number of unimportant mineral entries were discovered which could very well have been deleted, but the intricacies of cross-references have not permitted this being done. More particularly is this noticeable in the references made to the occurrences of silver with the gold at Charters Towers, Gympie, and other fields, which is practically useless information, although showing the localities where there is an association of minerals, and therefore having some interest from a mineralogical point of view. The index cannot be considered to be exclusively a guide to valuable mineral deposits, as many references are given to occurences which are not, or ever will be, of any commercial value, but it will be a guide to all the minerals and their occurrences, and to all reports containing details about them.

The association of metallic and non-metallic minerals with gangues and country rocks has been closely studied, and thousands of entries have been made giving the minerals which occur with one another. This work will have some practical value, and will also be of great advantage to those who might undertake scientific investigations concerning mineral associations and affinities.

Mineral and geological notes are given under most of the locality and mineral headings, references being made to metallic and non-metallic minerals, also to the gangues or lode matter in which the minerals occur, and to the geological formations and horizons in which the deposits have been formed. The geological notes are condensed descriptions which have been obtained, in most cases, from the publications issued by the Geological Survey, some of which, however, have had to be amended as the result of investigations made for the purpose of bringing up to date the geological data required for this work. A summary of the Queensland Geological Record is given on Plate No. 0, but further alterations are contemplated as a result of geological explorations now in progress.

Mineral discoveries have been made a subject of special inquiry, and old records and reports have been searched for information about the discovery and development of gold and other mineral fields. No records can be found concerning the history of many of the fields, and the year of discovery of others is only approximately correct, but in most instances the notes are fairly reliable and have been checked by a number of authorities.

Under the heading "Prospecting for Minerals" short notes are given for the benefit of those interested in mineral exploration, the appliances and equipment suitable to Queensland conditions, the necessary legal conditions to fulfil in acquiring land for mining purposes, the minerals which may be expected to be found, the geological formations in which minerals occur, and the areas of country in which to search, being some of the subjects dealt with.

The economic value of most of the minerals occurring in the State has been investigated, and a note is given on the uses to which each mineral can be applied. Some of the minerals which are obtainable in great abundance, it will be seen, are of very little value, while others have been found to have a variety of applications.

Locality references have been made as accurately as circumstances would allow, and notes are given regarding latitude and longitude, the counties and districts in which towns and mining centres are situated, and distances from railway stations or seaports. The rapid development of railway systems through mineral-bearing country has resulted in many of our distant mining centres being brought into direct railway communication with coastal towns, and as extensions now in progress approach other mineral centres, the distance from railways of a number of the fields herein given will require amending. All important alterations in the position of towns with regard to railways, however, have been made in each section of the text just prior to going to press, so that the situation of localities from railway bases will be correct for some time to come.

Some difficulty might be experienced in finding the positions of a few of the mineral occurrences in districts whose names in official publications have been recently changed. More particularly does this apply to the large area of country in Northern Queensland once called the Walsh and Tinaroo Mining District, and which is now divided into two portions—the Herberton Gold and Mineral Fields, and the Chillagoe Gold and Mineral Fields. Old geological reports, of which there are several relating to these fields, refer localities to the old district name of "Walsh and Tinaroo," while later reports in describing the same localities refer them to either the Herberton or the Chillagoe Fields.

Under all important towns, railway stations, and seaports, have been placed the names of the mining centres and fields with which they are in communication, and of which they form the bases. This will be found useful in facilitating inquiries concerning routes for the transit of minerals, machinery, supplies, &c., and will also show the importance of the localities from a commercial point of view.

The State is divided into fifteen districts, all of which are described under separate headings. Situation, latitude, longitude, boundaries, areas, and complete lists of counties are given under each district name, together with the principal towns, fields, and mining centres; references also being made to the maps in the Index which show their geographical and geological features.

The latest proclamations of all gold and mineral fields have been collected from *Government Gazettes*, and placed under their respective headings, while references are also made to the year in which each field was first proclaimed. Irregularities occur in the descriptions of a few of the fields, but the proclamations have been reproduced as they were officially gazetted.

Some attention has been devoted to the compilation of the list of 400 coal analyses from the published reports of the Geological Survey and from old departmental records. In this table perhaps no great value can be placed on the results given of analyses of coal made many years ago, but the samples tested by the Survey within the last few years have been prepared according to stipulated conditions and have been analysed with all possible care.

The table of artesian and sub-artesian bores included in the text is made up of 1,663 bore records, and contains all that is available concerning names, localities, positions, depths, temperatures, pressures, analyses, and geological and mineral notes. Each bore, or locality group of bores, whether sunk by the Water Supply Department, Railway Department, Public Estates Improvement Branch, or by private owners, has its own index number, and this number is retained in all cross-references throughout the text. Occurrences of salt, coal, gas, and limestone in bores are also recorded, references to which are made under both mineral and locality headings.

The statistics of mineral production have been very carefully recorded, the figures being as accurate as a thorough examination of the old official records of the Department of Mines could possibly make them. Nearly all the statistical tables represent, in the ordinary way, the annual values and quantities of minerals produced in districts and fields, but a new feature has been introduced in the District Mineral Summary Table to show at a glance (1) the total quantity and value of each mineral in each district or field, (2) the total value of the whole mineral production in each district or field, and (3) the total value of the whole production of each mineral in the State. The table also gives (4) the quantities of each mineral in each district in percentages of the whole State's production of that same mineral, together with (5) a value summary of each district's total production in percentages of the State's total production. In this table annual summaries in values and quantities are omitted.

A number of statistical diagrams are also included to illustrate, graphically, the yearly fluctuations in all mineral productions, while under all important minerals general reviews are given of their production and values. Under the names of the districts and principal fields statistical notes are also given concerning the production and value of their most important mineral products.

Bibliographical references to all goldfields, districts, towns, and other localities have been collected and placed under their respective headings. Lists of the principal reports bearing on mineral occurrences are given under mineral names, and under the names of authors are the titles of reports contributed by the officers of the staff. A general list of the publications of the Geological Survey since it was established in 1879 is also included, together with a list of geological and mining reports and maps published in the "Queensland Government Mining Journal" from its first issue in the year 1900, also a list of Supplementary Reports written by geologists and others, which have appeared in the Annual Reports of the Department of Mines since 1883.

While this bibliographical portion of the index was being compiled a large number of references and notes were accumulated which, it is hoped, will be published later on as a Bibliographical Contribution to the Mineralogy, Mining, Geology, Geography, and Explorations of Queensland.

In the Geological Survey Publications many references are made to the minerals of Papua (New Guinea), more particularly in the "Report on Geological Observations in British New Guinea," published in 1891. Several mineral occurrences have been recorded since that year, but for all practical purposes our indexing of Papuan minerals may be considered to have ceased when the mineral notes were extracted from the above-mentioned publication.

References to Queensland minerals appearing in the Geological Survey Reports have all been recorded up to No. 237 Publications (1912), beyond which the cataloguing has not been continued, although odd references to minerals and localities have been inserted whenever possible before the proofs were marked for press, the last portions of which were made ready in November, 1913.

Black type numbers and words in the text require some explanation. In the marginal column black type numbers indicate the mineral references following to be of more than ordinary importance, while in the text lines they show out the prominent minerals associated with others of minor importance. Names in black type at the beginning of entries are those of minerals, prominent localities, and important subjects, while in the body of the text black type names indicate the first entry of each mineral occurrence under each district or field. Numbers on top of pages on the inside margin are a guide to where the mineral entries are to be found, numbers in the centre referring to pages. Black type words on the top of left hand pages indicate the first words on those pages, while the words on top of the opposite pages show the last words, so that the first and last words are seen immediately on the pages where the book is opened.

All our geological publications have been examined for mineral synonyms, which with cross-references and variety names have been listed under the heading "Minerals of Queensland." No trouble, therefore, should be experienced in finding the adopted name of each mineral, even if recorded under several other names. In this synonym list, the black type names will be those used in future by the Geological Survey staff, and the confusion resulting from the use of several names for the one mineral will disappear.

The plates accompanying the text include one series of ten maps showing, on a small scale, the latest revisions in the boundaries of the geological formations, a second series, also of ten maps, defining the boundaries of the fifteen districts of the State and their county subdivisions. A third series illustrates the geological features of the most important gold, mineral, and coal fields, while a small-scale map shows the general geographical features of the whole of the State. Another small map indicates the positions of the important areas of mineral production in the State, the actual and potential values of each area being given in percentages of the whole value of the State's mineral production. The frontispiece consists of two circular diagrams, respectively illustrating actual and potential mineral values, each circle being divided into sectors of various sizes, representing districts or mining centres, the circumference of the circle being equivalent to their combined mineral production—that is, to the total production of the whole State. The actual values are absolute, the potential values being a diagrammatic expression of opinion regarding future mineral production. All these maps, thirty-six in number, have been produced from sets of coloured drawings specially prepared for the purpose, and will be found indispensable as a guide to the position of a large number of localities, and to the mineral occurrences and geological features referred to in the text.

ACKNOWLEDGMENTS.

In drawing attention to the assistance rendered by the officers of the Geological Survey Staff in connection with the Index, I must first acknowledge the services of Mr. Russell Dixon, an officer who has been closely associated with me in the work almost from its inception. His duties included, amongst other things, the card indexing of the mineral occurrences, the working out of a system of cross-references, compiling a number of mineral statistical tables, and checking the index cards with the printer's proofs. It is with a feeling of deep indebtedness that I bear testimony to the energy, persistence, suggestiveness, and thoroughness he has displayed during all the years the work has been in hand.

Mr. J. Smith, with his practical knowledge of minerals, has also been of great assistance in many ways, more particularly in checking mineral and locality entries and in collecting notes on the uses of minerals.

Mr. D. Fox, under the supervision of Mr. W. H. Greenfield, executed the drawings for most of the illustrations, this portion of the work entailing very close attention for over a year. Some of the maps were rather finely drawn for the necessary reduction to their present scale, and the results, as given herein, hardly do justice to Mr. Fox's fine draftsmanship.

Messrs. Pearce, Graff, and Cadell ably assisted in the drawing of the maps, and Mr. J. Byrne tabulated several hundred coal analyses and worked out their theoretical calorific values.

Messrs. Cameron and Ball each contributed original mineral notes and entries, but nearly all the work of these and other Assistant Government Geologists has been published in the Geological Survey Publications, to which numerous references are made in the text.

Of those outside the Geological Staff who contributed to the work, mention must be made of the clerical staff of the Mines Department, who facilitated the buildng up of the statistical tables, and supplied a considerable amount of data on a number of subjects.

Finally, I have to express my appreciation of the manner in which the work has been executed by the Government Printing Office.

B. DUNSTAN.

December, 1913.

ERRATA.

Page	109	"Baird Bush," add "Ref. A.R.D.M., p. 74 (1892)."
,,	118	Beaudesert. Quantities of Coal, Seams "3 ft." read "1 ft."
,,	124	Bismuth. Statistical note, 8th and 13th lines, "1910," read "1912."
,,	211	Chalcanthite. 1327. *Delete* text following.
,,	257	Coal. 1762. Add "Ref. G.S.Q.P. 225, pp. 32, 34 (1910)."
,,	286	Coal Bores, Eagle Farm. Add "Ref. G.S.Q. Pub. 58, p. 2 (1890)."
,,	301	Copper. Statistical Notes, last paragraph. Total mineral production. For "£104,009,087" read "£104,008,987."
,,	335	Corundum. Statistical Note. Total production of sapphires. For "£226,302" read "£226,202."
,,	357	Daintree (Richard). Read "was Geologist of Northern Queensland, 1868-1871."
,,	390	Eungella Goldfield. Mineral Statistics. For "maps" read "tables."
,,	449	Gold. Statistical Notes. Total mineral production. For "£104,009,087" read "£104,008,987."
,,	450	Goldfields and Mining Centres. Add "Alligator Creek Prov. G.F., Mount Clifford Prov. G.F., Mount Steadman Prov. G.F., Running Creek (Yorkey's) Prov. G.F., Bairdsville G.F., 3,200 acres (5 sq. miles) (Proclamation doubtful)."
,,	466	Mineral Ref. No. "3446" read "3445A," and place "3446" opposite next mineral reference.
,,	524-528	Govt. Mining Jour. Special "Report" read "Reports."
,,	526	Govt. Mining Jour. Special Report No. 53, omit "Vol. 9, p. 591 (1908)," insert *see* "No. 89A."
,,	568	Horsley (Sydney). Add "Report on Kangaroo Hills and Star River Mineral Fields. In A.R.D.M., pp. 109-111 (1904)."
,,	796	Oil in Queensland. Second line. For "124" read "129."
,,	889	Silver. Statistical Note. Last line, second par. Total mineral production. For "£104,009,087" read "£104,008,987."
,,	926	Sulphates. To first line add "barium *see* Barytes."
,,	965	Turquoise. Mineral Note. Last line. For "being" read "are."
,,	969	Uranium. Uses. Second last line. For "ten" read "one."
,,	370	Districts of the State. 2nd par. The total area of the State, 670,500 square miles, *includes* all islands.
,,	846	Queensland; area (repeat above note).

Introduction: For "673,040" read "670,500."

Queensland Mineral Index.

SYNOPSIS.

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  „ Counties
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QUEENSLAND MINERAL INDEX.

A1 Copper Mine. 4 miles N. of Einasleigh. *Min. Ref.* Copper Ore, *see* 2024B.

Abbieglassie Bore. *See under* Artesian Bores. No. 290.

Abbotsford Co. Gregory South Dist. *See map,* Pl. 18.

Abbreviations—

A.C.G.—Gregory (Sir A. C.), ex Geological Surveyor.
Adm.—Admiralty.
A.G.M.—Maitland (A. Gibb), ex Assist. Gov. Geologist.
A.R.—Assay Register, Geol. Surv. Office.
A.R. B.N.G.—Annual Report, British New Guinea.
A.R. D.M.—Annual Report, Department of Mines, Queensland.
A.R.H.E.—Annual Report of Hydraulic Engineer.
Atom. Wt.—Atomic Weight.
A.W.C.—Clarke (late Rev. A. W.)
B.D.—Dunstan (B.), Government Geologist.
Br.—Branch.
B.T.U.—British Thermal Units.
C.A. Paper.—Legislative Council and Assembly Paper.
C.F.V.J.—C. F. V. Jackson, ex Assist. Gov. Geologist; State Mining Engineer.
Co.—County.
Coy.—Company.
Coll.—Colliery.
Compo.—Composition.
C.Q.R.—Central Queensland Railway.
Cr.—Creek.
D.H.A.—Aplin (D'Oyley H.), ex Geological Surveyor.
D.M.—March (Dr. D.).
Div. Bd.—Divisional Board (Shire Council)
E.B.L.—Lindon (E. B.).
E.O.M.—Marks (E. O.), Assist. Gov. Geologist.
E.S.S.—Simpson (E. S.).
Educ. Office Gaz.—Education Office Gazette.
Ex. Evap. Power.—Experimental Evaporative Power.
F.W.M.—Martin (F. W.).
G.F.—Goldfield.
g. p. d.—Gallons per day.
G.A.—Government Analyst, Queensland.
G.S.M.—Queensland Geological Survey Museum.
G.S.Q. Pub.—Queensland Geological Survey Publication.
He.—Helms (Dr.).
H.—Hardness.
H.A.—Aitken (Henry).
Is.—Island.
J.B.H.—Henderson (J. Brownlie), Gov. Analyst.

Abbreviations—*continued.*

J.C.N.—Cosmo Newbery (late J.).
J.E. Ten.-W.—Tenison-Woods (late Rev. J. E.).
J.F.—Fletcher (Joseph).
J.H.—Henderson (John), C.E.
J.M.M.—J. Malcolm Maclaren.
J.S.—Storer (Dr. John).
K.S.—Staiger (late Karl).
L.A.—Legislative Assembly.
L.B.—Letter Book.
L.C.—Legislative Council.
L.C.B.—Ball (Lionel C.), Assist. Gov. Geologist.
L.W.S.—Low Water Spring Tides.
Lat.—Latitude.
Loc.—Locality.
Long.—Longitude.
M.C.—Mineral Claim.
M.F.—Mineral Freehold.
M.L.—Mineral Lease.
McL.—W. A. McLeod.
Max.—Maximum.
Min. Ref.—Mineral Reference.
Min. Sel.—Mineral Selection
Mt.—Mountain.
N.B.—Bartley (Nehemiah).
O. and A.—" Opals and Agates."
O.M.—Office Maps.
O.R.—Office Records of the Geological Survey.
P.A.—Prospecting Area.
P.C.—Prospecting Claim.
Par.—Parish.
Por.—Portion.
Prov. G.F.—Provisional Goldfield.
P.R.S.Q.—Proceedings, Royal Society of Queensland.
Q'land Nat.—Queensland Naturalist.
Q.G.S.P.—Q'land Geol. Survey Publications.
Q.M.—Queensland Museum.
Q.G.M.J.—Queensland Government Mining Journal.
R.—River.
R.C.—Reward Claim.
R.D.—Dixon (Russell).
R.G.—Roy Graff.
R.L.J.—Jack (Dr. Robert L.), ex Gov. Geologist.
R.M.—Mar (late Robert).
S.B.J.S.—Skertchly (Sydney B. J.), ex Assist. Gov. Geologist.
Sel.—Selection.
Sp. Gr.—Specific Gravity.
Stat.—Statistical.
Stn.—Station.
Syn.—Synonym.
T. and T.—Tatlock and Thompson.
Trib.—Tributary.
Ult.—Ultimate.
V.H.C.—Volatile Hydrocarbons.
W.A.D.—Dixon (W. A.).
W.C.T.—Warden, Charters Towers.
W.E.C.—Cameron (Walter E.), Assist. Gov. Geologist.
W.H.G.—W. H. Greenfield.
W.H.R.—Rands (William H.), ex Gov. Geologist.
W.W.D.—Dodds (W. W.), Analyst, Melbourne.

Abdalla Mine. Coen Goldfield. *Min.Ref.* Gold, *see* 3692.

Aberdare Colliery. Bundamba Coal Area. *Min.Ref.* Coal, *see* 1729, 1730.

Aberdeen Co. Leichhardt Dist. *See map*, Pl. 10.

Abermain Colliery. Bundamba Coal Area. *Min.Ref.* Coal, *see* 1730A.

Aberfoyle Run Bores. *See under* Artesian Bores. No. 132.

Abingdon, Par. of (Sel. 1477A). *Min.Ref.* Clay, *see* 1574.

Abrasive Materials. *See* Corundum, Tripolite.

NOTE: Very little of the corundum found at the Anakie Sapphire Mines is used as grinding material, mostly being made into small bearings and pivots for those parts of machines which rotate at high velocities.

Absolon's M.F. 2417. Mt. Flora Gold and Mineral Field. *Min.Ref.* Azurite, *see* 235B; Malachite, 6339A,

Abukiru Is. Purari R., Brit. New Guinea. *Min.Ref.* Coal, *see* 1834.

Acacia Sub-artesian Bore. *See under* Artesian Bores. Nos. 316, 347.

Acacia Downs Bores. *See under* Artesian Bores. Nos. 178, 358.

A.C. Creek. Cooktown Coalfield. *Min.Ref.* Coal, *see* 1610A.

Ace of Hearts. Tabletop, Croydon Goldfield. *Min.Ref.* Anglesite, *see* 12A; Galena, 2710D; Gold, 3540; Ironstone, 5501; Massicot, 6517.

Achelow Cr. Near Maneroo Stn.; W.byN. of Longreach. *Min.Ref.* Ironstone, *see* 5604; Kaolin, 5694.

Achillea Mine. Gebangle. *Min.Ref.* Copper Pyrites, *see* 2123A; Gold, 3575; Iron Pyrites, 4977; Mispickel, 6648.

Achilles Lease (252). Kangaroo Hills Mineral Field. *Min.Ref.* Bismuth, *see* 354; Cassiterite, 1155; Copper Carbonate, 1930; Ironstone, 5557.

—— Mine. Brovinia Goldfield. *Min.Ref.* Chrysocolla, *see* 1516; Gold, 3632; Jasper, 5638; Malachite, 6205.

Actinolite, *var.* of Hornblende, *which see.*

Ada Reef. New Homestead Diggings. *Min.Ref.* Gold, *see* 4066.

Ada sub-artesian Bore. *See under* Artesian Bores. No. 449.

Adam (J.). On the Great Fitzroy Mines, Ltd. Q.G.M.J., vol. 11, pp. 337-8 (1910).

Adam's Cr., Little Beatrice. Jordan G.F. *Min.Ref.* Gold (alluvial), *see* 3220.

Adavale. 115 miles (by coach) W.N.W. of Charleville, Western Rail. line. *See maps*, Pls. 18, 19.

GEOLOGICAL NOTE: The formations throughout this district are Rolling Downs (Lower Cretaceous) and Desert Sandstone (Upper Cretaceous). Opal deposits occur in the Desert Sandstone, and Artesian Water in the Rolling Downs.

—— Goldfield. *See* Moondilla Goldfield.

—— Run sub-artesian Bore. *See under* Artesian Bores. Nos. 80, 133. *See* A.R.H.E. (1901) for section of strata.

—— Township Bore. *See under* Artesian Bores. No. 1.

Adelaide M.L. (549). Cloncurry. *Min.Ref.* Cuprite, *see* 2403; Limonite, 5772; Malachite, 6130; Tile Ore, 2516.

—— Street Cutting, Brisbane North. *Min.Ref.* Vanadium, *see* 7915.

Adgingbong Bore. *See under* Artesian Bores. No. 206.

Admiral Tin Claim. Arbouin. *Min.Ref.* Cassiterite, *see* 830.

Admiralty Mammoth Coal Mines. In Mammoth Group. *See* Mammoth Coal Mines.

—— Sampson Mine, Chillagoe. *Min.Ref.* Stibnite, *see* 7631.

Advance P.A. (Bushnell's). Paradise Goldfield. *Min.Ref.* Gold, *see* 3609; Iron Pyrites, 5003.

—— Reef, Norton (Milton) Goldfield. *Min.Ref.* Calcite, *see* 530; Copper Pyrites, 2288; Galena, 3043; Gold, 4264, 4264A; Iron Pyrites, 5365; Mispickel, 6787; Stibnite, 7630; Zinc-blende, 8186.

Adventure Tin Mine. 3 miles S. of Montalbion. *Min.Ref.* Cassiterite, *see* 875.

Advice to Prospectors. *See under* Prospecting for Minerals.

Afton Downs Run Bores. *See under* Artesian Bores. Nos. 2, 134.

Agate, *var. of* Chalcedony, *which see. Mineral Note:* Large quantities of Agate are to be found about Percyville, to the south of Georgetown, on the Etheridge Goldfield, at the Percy River, at Agate Creek, and at Little River, near Croydon. The Agate deposits at these localities contain stones having a great variety in colour and banded structure. Much of the material is to be found in watercourses, but large areas are to be seen covered in places with loose agate pebbles of all sizes and shapes, derived from decomposed vesicular basalt in the vicinity. Most, if not all, the Agateware on the Queensland market is imported, the low cost of which prohibits the utilisation of the local material by dealers and jewellers.

Agate Cr., br. of Robertson R., Etheridge Goldfield. *Min.Ref.* Agate, *see* 1373; Bismutite, 399; Garnet, 3115; Gold, 3240; Limonite, 5848; Magnetite, 5996; Manganese-dioxide, 6414; Rock Crystal, 7188; Ruby, 2361.

Agate Downs Goldfield—

SITUATION: *See maps,* Pls. 20, 21. 51 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke; also *Co.* Merlin; *Dist.* Gregory North. Centre—about *Lat.* 21° 10′ S.; *Long.* 140° 20′ E. *Discovery:* In 1891.

POPULATION: *See* Cloncurry Mineral Field. AREA: 16,000 acres (25 sq miles).

PROCLAMATION OF FIELD: First and only one, 2nd December, 1891. Now included, by proclamation of 9th January, 1913, in the Cloncurry Gold and Mineral Field, *which see.*

MINERAL STATISTICS: *All included in* Other Goldfields; *see tables and diagram,* Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: **Gold,** *see* 3463-3467; Copper (Chrysocolla), 1492; Iron (Lievrite), 5734.

GEOLOGICAL NOTE: The country consists chiefly of clay and talcose slates, with bands of flaggy sandstone. Gold in wire form is found in quartz veins, and also in the bedding planes of the slates. Large quartz outcrops also occur in the locality. *See* G.S Q. Pub. No. 104 for details.

GEOLOGICAL PUBLICATION: Report—No. 104 (1895), *see under* Geol. Sur. Pub. List for titles.

WARDEN: Stationed at Cloncurry. INSPECTOR OF MINES: Stationed at Cloncurry.

Agate Downs Group. Maggie's Cr., Cloncurry. Includes—Labour Victory R.C. and Leases, Fluxiana and Occidental M.Ls., and Twiggie-vous Extd. M.C. *Min.Ref.* Iron Pyrites, *see* 5134; Limonite, 5870; Malachite, 6255; Redruthite, 7296; Tenorite, 7725; Tile Ore, 2559.

Ageston Coal Bore. *See* Couldery, *under* Coal Bores.

Agnes Reef. Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

Agnes Howson Reef. New Homestead Diggings. *Min.Ref.* Copper Pyrites, *see* 2237; Galena, 2952; Gold, 4067; Iron Pyrites, 5271.

Agnes Vale (Broom's) Cr. Trib. of Isis R., Burrum Coalfield. *Min.Ref.* Coal, *see* 1810.

Agnostic Cutting. Montalbion. *Min.Ref.* Anglesite, *see* 22; Galena, 2767.

Agriculture Reserve. Rockhampton. *Min.Ref.* Coal (Lignite), *see* 1795.

—— Reserve 2555, Por. 15, Par. of Cameby. *Min.Ref.* Coal, *see* 1626 (1).

Ainslie's (Clare Valley) Bore. *See under* Artesian Bores. No. 332.

Airlie Bore. *See under* Artesian Bores. No. 211.

Airlie Reef. Towalla Goldfield. *Min.Ref.* Gold, *see* 3779.

Air Motor Claim. Little Oakey Cr., Kangaroo Hills Mineral Field. *Min.Ref.* Ilmenite, *see* 4899A; Rutile, 7334.

Alabama Mine. Mareeba Goldfield. *Min.Ref.* Gold, *see* 3776.

—— Reef. Croydon Goldfield. *Min.Ref.* Gold, *see* 3537.

Alabaster, *var. of* Gypsum, *which see.*

Deposits of economic value are unknown, but might exist in Western Q'land, where there are several unexplored gypsum deposits. *See* notes *under* Calcium.

Aladdin Opal Mine. Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Alba Bore. *See under* Artesian Bores. Nos. 134, 370.

Albany Co. Kennedy South Dist. *See map,* Pl. 14.

Albert R. Burketown. Discovered by Stokes in 1841. *Min.Ref.* Halite, *see* 4649.

Albert and Logan Coal Areas. *See maps,* Pls. 6, 7. *Min.Ref.* Coal, *see* 1763, 1764, 1778-1790.

Albilba Run Bore. *See under* Artesian Bores. No. 135.

Albion Co. Burke Dist. *See map,* Pl. 20.

—— Cr., br. of Emu Cr., Montalbion. *Min.Ref.* Antimony, *see* 72.

—— Downs Run Bore. *See under* Artesian Bores. No. 136. Composition of bore incrustation is chiefly carb. of lime, some magnesia, and very little iron. Sulphates absent. This bore has the largest flow in the State. Daily flow, 1,700,000 gallons.

—— Mine. Montalbion. *Min.Ref.* Bournonite, *see* 437.

—— Mine W. Silverfield. *Min.Ref.* Stibnite, *see* 7627.

—— Reef. Dreghorn Diggings, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4081.

—— Reef. Marengo Goldfield. *Min.Ref.* Copper, *see* 1846; Gold, 4074.

—— Reef. Normanby Goldfield. *Min.Ref.* Gold, *see* 4120; Silver, 7499A.

—— Silver Mine. Star R. Mineral Field. *Min.Ref.* Ironstone, *see* 5568; Minium, 6603.

—— Silver Mine. Silverfield. *Min.Ref.* Cerargyrite, *see* 1181; Silver, 7456.

—— Tin Mine, Emu Cr., trib. of Walsh R. *Min.Ref.* Cassiterite, *see* 929.

—— Vale Sub-artesian Bore. *See under* Artesian Bores. No. 229.

Albite, *syn.,* Soda Felspar. *Compo.,* Silicate of alumina and soda. *Colour,* usually white. *Lustre,* pearly. *H* = 6·7. *Sp.gr.* = 2·6.

1. —— The Gorge, Flaggy Cr., br. of Wild R., 8 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

Aldershot Bores. *See* Pl. 24. *Min.Ref.* Coal, *see* 1818A, 1818B, 1830C. *See also under* Coal Bores.

Aldingham Sub-artesian Bore. *See under* Artesian Bores. No. 443.

Alexander Cr. Bore. *See under* Artesian Bores. No. 379.

—— Reef. New Zealand Gully, nr. Calliope. *Min.Ref.* Calcite, *see* 527A; Gold, 4252.

—— Group of Reefs. Maytown, Palmer Goldfield. Includes Alexandra, Helen Macgregor, and Rob Roy Reefs. *Min.Ref.* Gold, *see* 3679.

Alexander's Bore. *See under* Artesian Bores. No. 142.

Alexandra Hill G.M. Co.'s Mine. Charters Towers Goldfield. *Min.Ref.* Copper Pyrites, *see* 2216; Gold, 3881; Iron Pyrites, 5145; Zinc-Blende, 8116.

—— Queen P.A. Mt. Langan. *Min.Ref.* Galena, *see* 3031.

—— Reef. Palmer Goldfield. *Min.Ref.* Gold, *see* 3679.

—— R. (or Landsborough R.). Rises 95 miles N.byW. of Cloncurry, flows N. and N.W. into Leichhardt R., 85 miles W.S.W. of Normanton. *See maps,* Pls. 20, 21, 23. *Min.Ref.* Garnet, *var.* Andradite, *see* 3156.

—— Tin Mine. Mowbray Cr., nr. Herberton. *Min.Ref.* Cassiterite, *see* 1133.

Alexandrite. *See note under* Chrysoberyl.

Alexia Mine. Crow's Cr., Barmundoo Run. *Min.Ref.* Gold, *see* 4241.

Alfred Downs Bore. *See under* Artesian Bores. No. 346.

Alhambra, Nos. 1 and 2. Coolgarra. *Min.Ref.* Cassiterite, *see* 1037; Chlorite, 1446.

Alice Bore. *See under* Artesian Bores. No. 269.

Alice Group. Cloncurry. Includes—Alice, Deadlock, Mt. Surprise, and Iron Duke M. Leases. *Min.Ref.* Calcite, *see* 452; Chrysocolla, 1493; Copper Pyrites, 2070; Limonite, 5750; Malachite, 6093-6095; Tile Ore, 2496-2497.

—— M.L. 717. Alice Group, Cloncurry. *Min.Ref.* Chrysocolla, *see* 1493; Malachite, 6093; Tile Ore, 2496.

—— Reef. Mulgrave Goldfield. *Min.Ref.* Gold, *see* 3777.

—— Shaft (Day Dawn Lease (170)). Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1232; Copper Carbonate, 1926; Copper Pyrites, 2243; Malachite, 6298; Pyromorphite, 7147; Redruthite, 7298.

—— Downs Bores. *See under* Artesian Bores. No. 137.

—— Queen Reef. Alice R. (Philp) Goldfield. *Min.Ref.* Gold, *see* 3825.

Alice River (Philp) Goldfield—

Situation: *See maps*, Pls. 8 and 9. 80 miles W.byN. of Laura Rail. Stn. (Cooktown line). 147 miles (by rail and road) due W. of Cooktown. *Co.* Warner; *Dist.* **Cook.** Centre about *Lat.*, 15° and 16° S.; *Long.*, 143° and 144° E.

Discovery: 1904, by John Dickie. Population: 3 (1910).

Proclamation of Field: First and only one, Dec. 4th, 1906, as follows:—Commencing at a point bearing south and distant 2 miles from the south corner of Gold Mining Lease No. 18, Peninsular King, being a point bearing about 348 degrees and distant twenty-seven and three-quarter miles from the confluence of Eliza Creek with the Palmer River, and bounded thence on the south by a line bearing east five miles; on the east by a line bearing north ten miles; on the north by a line bearing west ten miles; on the west by a line bearing south ten miles and again on the south by a line bearing east five miles to the point of commencement.

Area: 64,000 acres (100 sq. miles).

Leases: Gold mining leases in force, 2; area, 11 acres (1910).

Mineral Statistics: *All included in* Other Goldfields; *see tables and diagram*, Pls. 36, 46, 46a, 47.

Mineral References: Gold, *see* 3825-3826.

Geological Note: The country rock of the Alice Goldfield is granite. Quartzites and other altered sedimentary rocks occur away to the west, and Desert Sandstones to the east. There are two main reefs, the Alice Queen and Peninsular King, but others exist in the neighbourhood. *See* G.S.Q. Pub. No. 209 for details.

Geological Publications: *Report*—No. 209. *See under* Geol. Surv. List for title. *See also under* Gov. Min. Jour., Report No. 25.

Warden: Stationed at Cooktown. Inspector of Mines: Stationed at Croydon.

Alice R. (head of middle br. of). 20 miles from Imoya. *Min.Ref.* Antimony, *see* 71.

—— R. Cooperatice Bore. *See under* Artesian Bores. No. 155.

—— R. Gold Discovery. *See under* Gov. Min. Jour., Report No. 25.

Alicia Bore. *See under* Artesian Bores. No. 211.

All Nations Claim. The Springs, Clermont. *Min.Ref.* Gold (alluvial), *see* 3335; Marcasite, 6514.

—— P.C. (All Nations Reef). Eidsvold Goldfield. *Min.Ref.* Galena, *see* 2733; Gold, 3636; Iron Pyrites, 5015.

—— Reef. Boolboonda Hill, nr. Mt. Perry. *Min.Ref.* Gold, *see* 3564; Silver, 7428.

—— Reef, Goldsmith Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3738.

All Nations Reef. Hamilton Goldfield. *Min.Ref.* Gold, *see* 3700; Hematite, 4705; Iron Pyrites, 5030.

—— Reef. Norton (Milton) Goldfield. *Min.Ref.* Galena, *see* 3044; Gold, 4265; Iron Pyrites, 5366; Silver, 7518; Zinc-Blende, 8187.

All Serene Reef. Two-mile, Gympie Goldfield. *Min.Ref.* Gold, *see* 4494.

Allan Sub-artesian Bore. *See under* Artesian Bores. No. 259.

Allandale Artesian Bore. *See under* Artesian Bores. No. 259.

Allandale Gold and Mineral Field.

Situation: *See maps,* Pls. 16, 17. *Par.* Allandale; *Co.* Griffith; *Dist.* North Kennedy. About 3 miles from Thalanga Rail. Stn., and 44 miles (by rail and road) S.W.byW. from Charters Towers.

Proclamation: First and only one gazetted, Nov. 14th, 1912, as follows:—Commencing at the north-east corner of portion 5, and bounded thence on the south-east by that portion bearing south-westerly about 152 chains; on the west by portion 4 bearing north about 137 chains; on the north-west by Glenroy West Lease south-easterly about 155 chains to the point of commencement.

Area: About 850 acres.

Mineral Statistics: *Included in* Charters Towers returns.

Mineral Reference: Gold, *see* 4044a.

Allendale Silver Mine. Chowey Cr., W. of Maryborough. *Min.Ref.* Galena, *see* 2715; Gold, 3567; Iron Pyrites, 4971; Massicot, 6522; Mispickel, 6645; Minium, 6578; Silver, 7434; Zinc-Blende, 8067.

—— Silver Mine (lode N. of). Chowey Cr. *Min.Ref.* Galena, *see* 2716.

Allenstown Mine. Ulam Goldfield. *Min.Ref.* Gold, *see* 4298.

Alliance Mine. Morinish Goldfield. *Min.Ref.* Copper (Native), *see* 2010; Gold, 4332-4333; Malachite, 6366; Tenorite, 7740.

—— Mine. Rosewood Goldfield *Min.Ref.* Gold, *see* 4350.

—— Mine. Ulam Goldfield. *Min.Ref.* Gold, *see* 4298.

—— Reef, nr. Thornborough. Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— I S. Lease (625). Gympie Goldfield. *Min.Ref.* Gold, *see* 4421.

Alligator Cr. Prov. Goldfield. Discovered in 1889. *See maps,* Pls. 14, 15. About 10 miles S.byE. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Min.Ref.* Gold, *see* 4096. *Proclamation:* No details available. *Statistics:* Included in Mackay returns.

Geological Note: The country rocks (Gympie Formation) are black slate and conglomerate in association with diorite. The gold occurs in a quartz and felsite lode. *See* G.S.Q. Pub. No. 93 for details.

Allison Co. Burke Dist.; *see map,* Pl. 20.

Allison's (Mrs.) Mine. Sugarloaf, Stanthorpe. *Min.Ref* Copper Pyrites, *see* 2191; Galena, 2837; Iron Pyrites, 5116.

Allora. *See maps,* Pls. 12, 13. 59 miles S. of Warwick (Main Rail. Line). *Min.Ref.* Coal, *see* 1632.

—— (1 mile W. of). *Min.Ref.* Coal, *see* 1629.

Allsorts or Two-mile Cr., N.E. of Koorboora. *Min.Ref.* Coal, *see* 1612a.

Allora Rail. Stn. (25 miles N.E. of). *Min.Ref.* Corundum, *see* 2370a; Sapphire, 2362a.

Alluvial Gold. *See under* Gold.

Alluvial Springs. Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 155.

Alma Bore. *See under* Artesian Bores. No. 255.

—— Cr. S.S.E. of Mt. Morgan. *Min.Ref.* Ilmenite, *see* 4912; Magnetite, 6055.

—— Cr. (Head of). Pibald, nr. Dundee. *Min.Ref.* Manganese-dioxide, *see* 6479.

—— Reef. Gympie Goldfield. *Min.Ref.* Felspar, *see* 2649; Gold, 4495; Hornblende, 4849; Iron Pyrites, 5457.

Almaden. *See maps*, Pls. 8, 9, 22. 121 miles (by rail) W.S.W. of Cairns (Junction of Etheridge and Chillagoe lines). *Co.* Lynd; *Dist.* Cook. *Lat.*, 17° 22′ S. *Long.*, 144° 42′ E. *Min.Ref.* Tripolite, *see* 7026.

GEOLOGICAL NOTE.—The rocks in and around the township consist of biotite-hornblende granite. Limestone, garnet rock, and ironstone occur about Mt. Lucy, and wolfram deposits in aplite and quartz about Schardon's Camp.

Almaden-Georgetown Road (Quartz Hill). Etheridge Goldfield. *Min.Ref.* Garnet (almandine), *see* 3154.

Almandine, *var. of* Garnet, *which see.*

Alpha Run Bore. *See under* Artesian Bores. No. 3.

Alpha Silver Mine. Argentine Silverfield. *Min.Ref.* Anglesite, *see* 44; Cerussite, 1259; Galena, 2981; Linarite, 5940; Massicot, 6539; Matlockite, 6550; Minium, 6604; Pyromorphite, 7148.

Altaite. *Compo.*, Telluride of lead. *Colour*, tin-white, with yellow tarnish. *H* = 3·35. *Sp.gr.* = 8·15. *Contents* (*max*), Lead 62 per cent.

2. ——. *Assoc.with* Cerussite and Pyromorphite, in quartz. *Loc.* 5 miles from Maxwelton, 40 miles S.W. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* O.R.

3. ——. *Assoc.with* Hessite, in quartz and calcite. *Loc.* No. 2 South Great Eastern Mine, Gympie Goldfield. *Co.* March; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 196, p. 25 (1905). *Assay:* Silver, 0.170 per cent.; Gold, 0.09 per cent.; *H.*, 2·5; *Sp.gr.*, 8·10.

3A. ——. *Assoc.with* Hessite, in quartz reef. *Loc.* Gt. Eastern, 2 S. Mine, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 196, p. 25 (1905). *Assay: See under* Hessite.

Alton Downs, nr. Rockhampton. *Min.Ref.* Coal, *see* 1792-1793.

Alum (native). *Syn.* Kalinite, *which see.* Occurrences of this mineral are unimportant.

3B. ——. Said to occur on Pinnacle Mountain, near Boonmoo, Chillagoe Railway Line. *Co* Lynd; *Dist.* Kennedy North.

Alumina. *See* Corundum.

Aluminate of Magnesia. *See* Spinel.

Aluminates. *See* Hercynite, Spinel, Pleonaste, Picotite.

Aluminite. *Syn.* Websterite, *which see.*

Aluminium (Al)—

Atom.wt. 27·1; *Sp.gr.* 2·58 (about one-third that of iron). *Colour*, silver-white.

MINERALS: *See* Alum, Corundum, Beauxite, Kalinite, Lazulite, Turquoise, Websterite. *See also under* Silicates, of which there are many containing aluminum.

MINERAL NOTE: Beauxite, the important ore of aluminium, occurs in association with basalt at Crow's Nest and at Cania. Up to the present time only casual attention has been paid to its occurrence.

USES: For many purposes aluminium can be used instead of steel, where lightness is a first consideration and expense a secondary one. It is also used as an alloy with iron in steel manufacture, as a substitute for lithographic stones, as one of the metals in bronze alloy, as a reducing agent in ore reduction, etc., etc.

VALUES: *See* Table under Metal Values in London for maximum and minimum prices since the year 1892.

Aluminium hydrate. *See* Beauxite.

—— phosphates. *See* Lazulite, Turquoise.

—— sulphates. *See* Alunogen, Websterite, Kalinite (Potash Alum).

Alunogen—

Compo., Hyd. sulphate of alumina. *Colour*, white. $H=1\cdot5$—2. *Sp.gr.*= 1·1—1·8. *Taste*, like common alum. *Contents* (*max.*), Alumina 15 per cent.

4. —— in the old workings, Golden Gate Mine, 4 miles N.W. of Croydon. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

5. ——. On clay. Blair Athol Coal Mines, Clermont Coalfield, 13 miles N.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* Q.M.

6. ——. In caves of sandstone. *Loc.* "Amphitheatre," Glen Haughton, Upper Dawson R., 35 miles N.W. of Taroom. *Co.* Labouchere; *Dist.* Leichhardt. *Ref.* B.D.

Alva Bore. *See under* Artesian Bores. No. 242.

Amamoor Cr., 19 miles S.S.E. of Gympie. *Min.Ref.* Azurite, *see* 263; Barytes, 283; Calcite, 560; Copper Pyrites, 2332; Galena, 3068; Iron Pyrites, 5439; Malachite, 6375; Tetrahedrite, 7779; Zinc-Blende, 8208. *See also under* Gov. Ming. Jour., Report No. 83.

Amaroo Co. Gregory North Dist.; *see map*, Pl. 20.

Amaru Bore. *See under* Artesian Bores. No. 389.

Ambathala Lease Bore. *See under* Artesian Bores. No. 138.

Amber. Deposits are unknown in the State, but semi-fossil resins occur in the scrub country about Atherton, in the Herberton district, west of Cairns.

Ambo Bore. *See under* Artesian Bores. No. 358.

Ambrose Limestone Quarry. ¾-mile from Ambrose Rail. Stn. (Rockhampton-Gladstone Line). *Min.Ref.* Limestone, *see* 679A.

Amby Sub-artesian Bore. *See under* Artesian Bores. No. 391.

Amby Cr., Falls of Timburn, nr. Kilmorey Stn. *Min.Ref.* Fontainbleu Sandstone, *see* 580.

Amethyst, *var* of Quartz, *which see.* Up to the present time Amethyst of marketable quality is very rare in the State, and it is only occasionally stones are found which can be cut into gems. Most, if not all, the Amethysts on the Queensland market are imported from foreign countries.

Ammonium chloride, *see* Sal-ammoniac.

Amphibole, *syn.* Hornblende, *which see.*

Amy Moore Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Ana (St. Patrick's) Cr. St. Aignan's Is. (Misima), **Brit. New Guinea.** *Min. Ref.* Gold (alluvial), *see* 3426; Iron Pyrites, 5475.

Anakie Mineral (Sapphire) Field—

Situation: *See maps*, Pls. 10, 11, 31. 193 miles W. of Rockhampton. *Cos.* Clermont and Plantagenet; *Dist.* Leichhardt. Centre—about *Lat.* 23° 20′, *Long.* 147° 40′.

Discovery: Retreat Creek on this field was worked during 1870 for red stones which were thought to be rubies. Afterwards these stones were proved to be only zircons and garnets, and in consequence the mines were abandoned. Rubies, however, are known to occur here. Sapphires were also found, but not recognised as such until 1878, when A. J. Richardson made the discovery. Green, yellow, and blue sapphires, together with zircons, garnets, topazes, and a few rubies were found at Newsome's Claim, Retreat Ck. in 1885, and mining on the field has been carried on ever since that time. Diamonds were first found at Policeman's Creek by B. Dunstan in 1901.

Population: 446 (1910).

Proclamation of Field: First (and only one), Sep. 3rd, 1902, as follows:—Commencing at the north-west corner of portion 40v, and bounded thence on the west by a line bearing north 480 chains; on the north by a line bearing east 210 chains; on the east by a line bearing south 120 chains; again on the north by a line bearing east 285 chains, and again on the east by a line bearing south 230 chains to May Creek; on the south-east by that creek upwards to a point east from the starting point; and on the south by a line bearing west to the point of commencement.

Area: 18,385 acres (28 sq. miles).

Anakie Mineral (Sapphire) Field—*continued.*

Principal Mining Centres: Retreat Cr. (Sapphiretown), Sheep Station Cr., Policeman Cr. (Rubyvale), Tomahawk Cr., Central Cr., *which see.*

Mineral Statistics: Sapphires, &c., *see tables and diagram,* Pls. 44, 46, 46A, 56.

Mineral References: Gold, *see* 3361 (alluvial); Coal, 1696A; Copper (Azurite), 238; (Malachite), 6341; Iron (Ilmenite), 4902, 4902A; (Ironstone), 5600; (Magnetite), 6029; Rutile, 7335; Amethyst, 7170; Cairngorm, 7181; Chalcedony, 1350A; Corundum, 2373; Diamond, 2580; Garnet, 3134; Hornblende, 4838; Hyacinth, 8236, 8237; Jasper, 5643; Magnesite, 5951; Pleonaste, 7589; **Sapphire,** 2355; Rubellite, 7875; Ruby, 2363; Spinel, 7581; Topaz, 7806; Tourmaline, 7864; Zircon, *var.* Hyacinth, 8236, 8237.

Geological Note: Granite with gneiss, schist, slates, and intrusive rocks occur throughout the district, with remnants of basalt flows forming isolated peaks. Sapphire deposits occur in old watercourses, the gemstones having been washed out of the old weathered flows of basalt. *See* G.S.Q. Pub. No. 172 for details.

Geological Publications: Reports—Nos. 81, **172.** *See* Geol. Sur. Pub. List; *also* Gov. Min. Journal, Reports Nos. 17, 41, 55; *also* Supplementary Report List, Nos. 102, 105.

Warden: Stationed at Clermont.

Inspector of Mines: Stationed at Rockhampton.

Reports: Inspector's and Warden's monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Statistical Note: In 1892 and 1893 Sapphires to the value of about £9,000 were produced at Anakie, but prices paid did not justify work being continued, and many of the mines were closed down. In 1900 stones of the value of £900 were mined, but in 1901 £6,000 was realised from the sale of stones, and from that time onwards sapphire mining became very active. The largest production was in 1907, when stones to the value of £40,500 were produced, and last year, 1912, followed this very closely with a production valued at £40,006. The total value of sapphires produced at Anakie is officially stated to be £226,302 up to 1912, but estimating quantities and values is very difficult, and stones are taken away from the field of which no record is made. Probably the value of the output is much larger than the amount given above.

Analcime, *syn.,* Analcite. *Compo.* Hyd. silicate of alumina and soda (a zeolite). *Colour,* usually white. *H* = 5·55. *Sp.gr.* = 2·2.

7. ——. In volcanic rock. *Loc.* Strathmore Cr., br. of Bowen R. 55 miles S.W.byS. of Bowen. *Co.* Salisbury; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 69 (1887).

8. ——. In cavities in altered igneous rocks. *Loc.* Bowen R., about 50 to 60 miles S.S.W. of Bowen. *Cos.* Drake, Carlisle; *Dists.* Kennedy North and South. *Ref.* G.S.Q. Pub 4 (1879).

9. ——. Pelican Cr., br. of Bowen R., 50 miles S.S.W. of Bowen. *Co.* Drake; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

10. ——. In basalt, Clermont (Peak Downs) Goldfield, 229 miles (by rail) W.byN. of Rockhampton. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* P.R.S.Q., vol. 4, p. 69 (1887).

11. ——. *Assoc.with* Natrolite and Calcite. *Loc.* Morinish Goldfield, 29 miles N.W. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.**

12. ——. In decomposed basalt. *Loc.* Fitzroy R., Rockhampton. *Co.* Livingstone (*ante*). *Ref.* B.D.

Analyses of Artesian Water. *See table under* Artesian Bores.

—— of Coal. *See table under* Coal Analyses.

Ancient Briton Mine. Etheridge Goldfield. *Min.Ref.* Cerussite, *see* 1190D; Galena, 2753A; Gold, 3727A; Massicot, 6525B; Malachite, 6217A.

Andalusite, *syn.* Chiastolite, *which see.*

Anderson Bros. R.C. Mt. Emu Plains Stn. *Min.Ref.* Gold (alluvial), *see* 3191A; Magnetite, 5970A.

Anderson's Tin Lode. Coolgarra. *Min.Ref.* Cassiterite, *see* 1038.

—— (Fairbairn) Bore. *See under* Artesian Bores. No. 402.

Andradite, *var. of* Garnet, *which see.*

Andromache R. S.S.E. of Bowen. *Min.Ref.* Copper Pyrites, *see* 2239A; Iron Pyrites, 5313; Lead, 5725A; Limonite, 5879A; Malachite, 6291A; Redruthite, 7297A; Silver, 7494; Tile Ore, 2563B.

Angabunga R. Brit. New Guinea. *Min.Ref.* Gold, *see* 4552.

Angellala Sub-artesian Bore. *See under* Artesian Bores. No. 139.

Anglesite. *Compo.*, sulphate of lead. *Colour*, usually white. *H*=3. *Sp.gr.*= 6·1 to 6·4. *Lustre*, usually adamantine. *Contents* (*max.*), Lead 68 per cent.

12A.——. *Assoc.with* Gold, Galena, Massicot, and Ironstone, in quartz. *Loc.* Ace of Hearts Reef, Tabletop, 9 miles N.N.E. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 118, p. 35 (1896).

12B.——. *Assoc.with* Gold, Pyromorphite, and Massicot, in quartz. *Loc.* Hope Reef, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

12C.——. *Assoc.with* Galena, Cerussite, Massicot, Malachite, Azurite, and Limonite, in lode. *Loc.* about 5 miles S. of Coalstoun Lakes, 16 miles S.W. of Biggenden Rail. Stn. (Gayndah line). *Co.* Mackenzie; *Dist.* **Burnett.** *Ref.* A.R., pp. 287, 288, 291, (1910).

13. ——. *Assoc.with* Gold, Iron Pyrites, Redruthite, and Zinc-Blende, in quartz reef. *Loc.* Victory United Lease (33) (Augusta Maid of Erin Shaft), Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 102, p. 3 (1895).

14. ——. *Assoc.with* Silver and Galena. *Loc.* Yarrol Stn., Dawes Range, 25 miles N.W. of Mt. Perry, 92 miles (by rail and road) W. of Bundaberg, Mt. Perry Rail. line. *Co.* Yarrol (*ante*). *Ref.* G.S.M.

15. ——. *Assoc.with* Cerussite and Galena, in red gossan. *Loc.* Spring Cr., br. of Blackfellow's Cr. (trib. Lynd R.), 12 miles W. of Fossilbrook, 45 miles S.W. of Almaden (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

16. ——. *Assoc.with* Massicot. *Loc.* nr. Palmer R., br. of Mitchell R., W.S.W. of Cooktown. *Cos.* Cootha, Maramie, Strathleven, Chelmsford; *Dist.* Cook. *Ref.* O.R.

49. ——. *Assoc.with* Galena, Minium, and Ironstone. *Loc.* Hero Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay:* Lead=46 per cent.; Silver=135 gr. per ton. *Ref.* G.S.Q. Pub. 26, p. 203 (1886).

17. ——. *Assoc.with* Cerussite. *Loc.* Irvinebank, 10 miles S. of Stannary Hills Rail. Stn. (br. of Chillagoe line), 12 miles W.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M.

18. ——. *Assoc.with* Galena. *Loc.* Cuze's Lease, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe br. Rail. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

19. ——. *Assoc.with* Galena. *Loc.* Barossa Silver Lease, Silverfield (*ante*). *Ref.* G.S.M.

20. ——. *Assoc.with* Galena. *Loc.* Mystery Lease, Silverfield (*ante*). *Ref.* G.S.M.

21. ——. *Assoc.with* Galena. *Loc.* Silver Hill Lease, Silverfield (*ante*). *Ref.* G.S.M.

21A.——. *Assoc.with* Massicot, Cerussite, and Malachite, in lode. *Loc.* Popahrairie P.A., Fiery Cr., about 15 miles N.byW. of Georgetown, Etheridge Goldfield. *Co.* Einasleigh; *Dist.* Cook. *Ref.* A.R., p. 194 (1909).

21B.——. *Assoc.with* Galena and Cerussite, in lode. *Loc.* P.A., between Aurora Cr. and Rocky, about 8 miles S.W. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* A.R., p. 242 (1910).

21C.——. *Assoc.with* Silver and Cerussite, in lode. *Loc.* Mt. Dee Valley, Castleton, 5 miles S.S.E. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* A.R., p. 200 (1909).

21D.——. *Assoc.with* Silver, Galena, Cerussite, and Malachite, in quartz lode. *Loc* Wright's Leader, Donnyville, 4½ miles S. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* A.R., p. 228 (1910).

21e.——. *Assoc.with* Gold, Silver, Galena, Massicot, and Cerussite, in lode. *Loc.* 1 mile N. of International Mine, Rocky, 6 miles S.W.byS. of Georgetown, Etheridge Goldfield (*ante*). *Assay: See* No. 2757a. *Ref.* A.R., p. 228 (1910).

22. ——. *Assoc.with* Galena. *Loc.* Agnostic Cutting, Montalbion, 7 miles S.W. of Stannary Hills, Chillagoe br. line, **Walsh and Tinaroo Mineral Fields.** *Co.* Hodgkinson; *Dist.* Cook. *Assay:* Silver = 100 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

23. ——. *Assoc.with* Silver and Galena. *Loc.* Lady Jane Mine, Montalbion (*ante*). *Ref.* G.S.Q. Pub. 125, p. 32 (1897). *Contents: See* No. 7452

24. ——. *Assoc.with* Galena and Copper Pyrites, in pipe veins. *Loc.* Montalbion Silver Mine, Montalbion (*ante*). *Ref.* G.S.Q. Pub. 119, p. 29 (1897).

25. ——. *Assoc.with* Galena and Silver. *Loc.* North Queensland S.M. Co., Montalbion (*ante*). *Yield:* Silver, 90 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 31 (1897).

26. ——. *Loc.* Silver Hill Lode, Montalbion (*ante*). *Ref.* G.S.M.

27. ——. *Assoc.with* Galena, in lode. *Loc.* Mountain Maid Silver Mine, 5 miles S. of Montalbion, about 12 miles S.S.W. of Stannary Hills, Walsh and Tinaroo Mineral Fields (*ante*). *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 33 (1897).

28. ——. *Assoc.with* Cerussite, Galena, Massicot, Manganese-dioxide, and Actinolite. *Loc.* Macrossan Silver Mine, 2 miles E. of Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay:* Silver = 40 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

29. ——. *Assoc.with* Galena and Copper Carbonate, in lode. *Loc.* New Moon Mine, Muldiva, 8 miles W.S.W. of Almaden, Chillagoe Rail. line, Walsh and Tinnaroo Mineral Field (*ante*). *Assay:* Silver = 269 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

30. ——. *Assoc.with* Massicot, in ferruginous gossan. *Loc.* P.A. (29), Dargalong, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

31. ——. *Assoc.with* Minium and Galena, in ferruginous gossan. *Loc.* Chillagoe Queen Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

32. ——. *Assoc.with* Massicot, Cerussite, and Galena, in talcose iron gossan. *Loc.* Ewan and Delaney's Area, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

33. ——. *Assoc.with* Cerussite, Minium, and Hematite. *Loc.* Excelsior Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

34. ——. *Assoc.with* Minium, Massicot, Cerussite, Galena, and Copper Carbonate. *Loc.* Pandora Mine, Daralong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

35. ——. *Assoc.with* Cerussite and Ironstone, in purple gossan. *Loc.* Quetta or Skardon's Mine, Dargalong (*ante*). *Assay:* Silver = 73 oz. 18 dwt. per ton; Lead = 19·12 per cent.; Silica = 4·17 per cent. *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

36. ——. *Assoc.with* Iron Pyrites, Galena, and Limonite, in quartz reef. *Loc.* nr. Mt. Luxton, 3 miles N.E. of Ord, Mt. Garnet Rail. line, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay:* Silver = 39 oz. per ton. *Ref.* G.S.Q. Pub. 19, p. 12 (1897).

37. ——. *Assoc.with* Silver, Galena, and Massicot. *Loc.* Silver Wave Claim, Stanthorpe, 38 miles (by rail) S. of Warwick. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 125, p. 30 (1897).

38. ——. *Assoc.with* Galena, Cerussite, Redruthite, and Copper Carbonate, in gossan. *Loc.* Silver King Mine, Texas, 50 miles W.S.W of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. Average Contents: Silver = 26 oz. per ton. *Ref.* G.S.Q. Pub. 120, p. 94 (1898).

39. ——. *Assoc.with* Galena, Chalcanthite, Massicot, Minium, and Linarite, in slate. *Loc.* John Bull Mine, Dry R., br. of Wild R., 12 miles S.S.W. of Herberton, **Walsh and Tinaroo Mineral Fields.** *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

40. ——. *Assoc.with* Silver, Minium, Galena, and Malachite. *Loc.* Koh-i-noor Mine, Coolgarra, 12 miles N.N.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Silver = 500 oz. per ton; Lead = 40 per cent. *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

41. ——. *Assoc.with* Minium and Galena, in quartz. *Loc.* Tucker's Silver Lode, Return Cr., Coolgarra, 9 miles N.N.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

42. ——. *Loc.* Short's Mine, Newellton (Silver Valley), 10 miles S.W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

42A.——. *Assoc.with* Gold, Silver, Massicot, and Cerussite, in lode. *Loc.* nr. Bluff Stn., 9 miles S.E. of Mt. Leyshon, 22 miles S.S.E. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* A.R., p. 260 (1910).

42B.——. *Assoc.with* Gold, Silver, Galena, Massicot, and Cerussite, in lode. *Loc.* Right-hand br. of One-mile Gully, 1½ mile S.E. of Mt. Leyshon. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

42C.——. *Assoc.with* Galena and Cerussite, in quartz lode. *Loc.* Valley of Lagoons Run, 6 miles E. of Wyandotte Tel. Stn., about 64 miles S.E. of Mt. Surprise Rail. Stn. (Etheridge line). *Co.* Gunnawarra; *Dist.* Kennedy North. *Ref.* A.R., p. 176 (1909).

43. ——. *Assoc.with* Galena and Copper Pyrites, in lode. *Loc.* Dawn (Don) R., 35 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Assay:* Silver = 9 oz. 4 dwt. per ton; Copper = trace; Lead = 78·2 per cent.; Bismuth = trace. *Ref.* A.R., p. 61 (1906).

44. ——. *Assoc.with* Minium, Linarite, Cerussite, Galena, and Pyromorphite, in lode. *Loc.* Alpha Silver Mine, Star R. (Argentine) Mineral Field, 50 miles N.W. of Ravenswood Junction, 104 miles (by rail road) W.S.W. of Townsville, Gt. Northern Rail. line. *Assay:* Lead = 20 per cent.; Silver = 5 oz. per ton. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 26, p. 2, (1886), and G.S.M.

45. ——. *Assoc.with* Minium, Cerussite, Massicot, and Ironstone. *Loc.* Bonanza Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

46. ——. *Assoc.with* Massicot. *Loc.* Colorado Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.M.

47. ——. *Assoc.with* Minium, Cerussite, and Ironstone. *Loc.* Eureka Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q Pub. 26, p. 2 (1886).

48. ——. *Loc.* Great Kennedy Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.M.

50. ——. *Assoc.with* Minium and Cerussite, in lode. *Loc.* Humphrey and Co.'s Silver Mine, Sel. (172), Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

51. ——. *Assoc.with* Cerussite and Minium. *Loc.* Lady Annie Mine, Star R. (Argentine) Mineral Field (*ante*). *Assays: See* No. 1272. *Ref.* G.S.M. and G.S.Q. Pub. 26, p. 3 (1886).

52. ——. *Assoc.with* Minium and Cerussite, in lode. *Loc.* Northbrook Mine, Beazley's Sel. (179), Star R. (Argentine) Mineral Field (*ante*). *Assays:* Silver = 108 oz. and 69 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

53. ——. *Assoc.with* Minium, Galena, Cerussite, and Ironstone. *Loc.* St. John's Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

54. ——. *Assoc.with* Minium, Galena, and Hematite. *Loc.* Struck Oil Silver Mine. Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4, (1886).

55. ——. *Assoc.with* Galena, Cerussite, and Minium. *Loc.* True Blue Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 26, p. 3 (1886).

56. ——. *Assoc.with* Galena, Minium, Cerussite, Gold, Iron Pyrites, Siderite, and Zinc-Blende, in ferruginous gossan. *Loc.* Union Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 25, p. 5 (1886), and G.S.M.

57. ——. *Assoc.with* Galena, Minium, Cerussite, Iron Pyrites, and Mispickel, in lode. *Loc.* Venture Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay:* Lead = 68 per cent.; Silver = 82 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

58. ——. *Assoc.with* Galena, Minium, Massicot, Cerussite, and Ironstone, in ferruginous gossan. *Loc.* Washington 1 and 2 Silver-Lead Mines, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

59. ——. *Loc.* Star R. (Argentine) Silver Field (*ante*). *Assay:* Lead=67 per cent; Silver=307 oz. per ton. *Ref.* P.R.S.Q. vol. 4, p. 72 (1887).

60. ——. *Assoc.with* Galena, Minium, Cerussite, Iron Pyrites, Ironstone, and Zinc-Blende, in lode. *Loc.* Pyramid Silver-Lead Lode, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 57, pp. 2, 3 (1889).

60A.——. *Assoc.with* Silver, Galena, and Cerussite, in lode. *Loc.* Black Cr., br. of Police Cr., about 30 miles S.byE. of Mt. Wyatt Goldfield. *Co.* Sellheim (*ante*). *Ref.* A.R., p. 221 (1910).

61. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Massicot, Galena, Mispickel, and Limonite, in gossan and slate. *Loc.* Silver Knob P.A., Mt. Langan, Emu Cr., 14½ miles W.N.W. of Kannungar Rail. Stn. (Brisbane Valley line). *Co.* Cavendish; *Dist.* **Moreton.** *Assay: See* No. 3033. *Ref.* Q.G.M.J., vol. 7, p. 467 (1906).

62. ——. *Assoc.with* Gold, Silver, Hematite, Limonite, Minium, Massicot, Cerussite, and Galena, in lode. *Loc.* Bompa Silver-Lead Mines, 2 miles W.byS. of Littlemore Rail. Stn. (Boyne Valley line), 53 miles (by rail and road) S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 159, p. 7 (1901).

63. ——. *Assoc.with* Galena. *Loc.* Carmilla Mine, Carmilla Creek, 30 miles N. of St. Laurence. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* Q.M.

Anglo-Saxon Mine, Mt. Usher, 6 miles S.E. of Mt. Morgan. *Min. Ref.:* Gold, 4338A; Iron Pyrites, *see* 5406, 5406A; Silver, 7531A; Telluride of Gold and Silver, 7702A; Zinc-Blende, 8203A.

—— 1W. Mine, Limestone, Palmer Goldfield. *Min.Ref.* Gold, *see* 3672A; Hematite, 4704.

—— Reef. Limestone, Palmer Goldfield. *Min.Ref.* Gold, *see* 3673; Iron Pyrites, 5027.

Angor Tin Mines. 33 miles N.E. of Georgetown. *Lat.*, 17° 55′ S.; *Long.*, 143° 50′ E. *Min.Ref.* Cassiterite, *see* 965A.

Ankerite. *Compo.*, carbonate of lime, iron, and magnesia, *Colour*, white, gray, reddish, tarnishes yellowish. $H = 3{\cdot}5$—4. *Sp.gr.* $=2{\cdot}9$—$3{\cdot}1$.

64. ——. *Assoc.with* Dolomite, in brecciated rock. *Loc.* Mt. Shamrock Gold Mine, 5½ miles W.N.W. of Degilbo, 63 miles (by rail and road) W. of Maryborough, Gayndah Br. Rail. line. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.M.

65. —— *Assoc.with* Gold, in lode. *Loc.* Girl-I-Left-Behind-Me Mine, Stony Cr., Stanton Harcourt Goldfield, 11 miles N. of Degilbo, 69 miles (by rail and road) W. of Maryborough (Gayndah Rail. line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 168, p. 2 (1901).

66. ——. As drusy crystals. *Loc.* Silver Spur Mine (60′ level), 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** *Ref.* L.C.B.

67. ——. *Assoc.with* Calcite, in quartz. *Loc.* No. 7 Tunnel, Moonmera Copper Mines, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 195, p. 22 (1904).

Anna Parnell Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 880.

Annan R. Tinfield—

Situation: *See maps,* Pls. 8, 9. Between Annan and Bloomfield Rivers, 20 to 28 miles S. of Cooktown. *Co.* Banks; *Dist.* Cook. Centre about *Lat.* 15° 45′ S.; *Long.* 145° 15′ E. Portion of Cooktown Mineral Field, *which see.*

Discovery: About 1885.

Population: Included in Cooktown Mineral Field.

PRINCIPAL MINING CENTRES: Mt. Amos, Mt. Browning, Lion's Den (Tableland), Mt. Leswell, Mt. Hartley, Rossville, Mt. Romeo, *which see.*

MINERAL STATISTICS: Tin, *see tables,* Pls. 38, 46, 46A.

MINERAL REFERENCES: **Tin** (Cassiterite), *see* 776-827; Wolfram, 7928-7934; Cobalt, 1834A; Iron (Iron Pyrites), 5023-5025; (Mispickel), 6666-6672; Chalcedony, 1340; Chlorite, 1429; Corundum, 2366; Felspar, 2629-2631; Hornblende, 4826A; Mica, 6553; Orthoclase, 7035-7037; Rock Crystal, 7184; Sapphire, 2340; Sphene, 7572; Talc, 7671-7672; Tourmaline, 7827-7850.

GEOLOGICAL NOTE: In this locality there are altered sedimentary rocks belonging to the Gympie Formation (Permo-carboniferous), closely associated with granite. Tin lodes occur in both the granite and the Gympie rocks, but most of the tin produced on the Annan Tinfield has been derived from alluvial deposits.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 35 (1887), 66 (1891), **210** (1907). *See under* Geol. Sur. Pub. for titles. *See also* List of Plans *under* Department of Mines Publications.

WARDEN: Stationed at Cooktown.

INSPECTOR OF MINES: Stationed at Croydon.

REPORTS: Inspectors' and Wardens' monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Annan R. Co.'s Hydraulic Sluicing Workings. Annan Tinfield. *Min.Ref.* Cassiterite, *see* 806.

Annandale Bore. *See under* Artesian Bores. No. 410.

Annandale South. Nr. Denham Range, 81 miles W.N.W. of St. Lawrence. *Min.Ref.* Coal, *see* 1680.

Annie Mine. Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4097.

—— Mine. Cawarral Goldfield. *Min.Ref.* Dolomite, *see* 2590; Galena, 3059; Gold, 4319; Zinc Blende, 8201.

—— Reef. Gympie Goldfield. *Min.Ref.* Gold, *see* 4496.

Annisfield Bore. *See under* Artesian Bores. No. 361.

Anniversary Copper Mine, Herberton. *Min.Ref.* Tenorite, *see* 7728; Vivianite, 7922.

Annual Reports of the Mines Department. *See under* Department of Mines.

Anthony, on Ipswich-Fassifern Rail. Line. *Min.Ref.* Limestone, *see* 664A.

Anthracite, *var. of* Coal, *which see.* True anthracite is rare in Queensland, but large quantities of semi-anthracite occur on the Dawson and Mackenzie Rivers in the Central District.

Anthracite Discoveries. *See under* Discoveries.

Anti-Clique Reef (Ida Group). Palmer Goldfield. *Min.Ref.* Gold, *see* 3680.

Anti-Friction Material. *See* Talc and Graphite (as lubricants), Corundum (for bearings), Antimony (as an alloy in metal bearings) .

Antill Plains Bore. *See* North Queensland Collieries Co. Bores *under* Coal Bores.

Antimonial Copper Ore. *See* Tetrahedrite.

Antimonial Lead Ore. *Syn.* Bournonite, *which see.*

Antimonial Silver Ore. *See* Pyrargyrite, Stephanite.

Antimonite, *syn.* Stibnite, *which see.*

Antimony (Sb). *Atom.Wt.,* 20·2. *Sp.gr.,* 6·61-6·8. *Colour,* bright bluish-white. Brittle.

USES: Combined with lead and tin, it makes useful alloys, of which type metal, Britannia metal, and pewter are the most important. Used also in medicine, and in the manufacture of fireworks, matches, india-rubber, linoleum, etc. Stibnite, the sulphide of antimony, is the common source of the metal.

MINERALS: *See* Antimony (native), Bournonite, Cervantite, Chalcostibite, Pyrargyrite, Stephanite, **Stibnite,** Tetrahedrite, Valentinite.

ASSOCIATED MET. MINERALS: Argentite, Native Copper, Copper Pyrites, Galena, **Gold,** Hematite, Iron Pyrites, Mispickel, Pyrrhotite, Redruthite, Silver, Tetradymite, Wolfram, Zinc-Blende.

Gangues, &c. : Calcite, Quartz, Quartzite, Siliceous and Talcose Slates.

Mineral Note : Commonly assoc. with gold in calcite or quartz gangues, in defined lodes. The country rocks, so far recognised, are slates, shales, sandstones, &c., of Gympie Formation (Permo-carboniferous).

Fields :

Cocoa Cr. (trib. of McIvor River), *see maps*, Pls. 8, 9.
Hungry Hill (St. John's Cr., Eidsvold), *see maps*, Pls. 4, 5, 35.
Mitchell Riv. (nr. Hodgkinson G.F.), *see maps*, Pls. 8, 9, 22.
Neerdie (nr. Gympie), *see maps*, Pls. 4, 5.
Northcote (nr. Hodgkinson G.F.), *see maps*, Pls. 8, 9, 22.
Woodville, *see maps*, Pls. 8, 9, 22.
See under Names of Fields for details.
Note : Large deposits remain unworked at Hungry Hill.

Discoveries : *See under* Discoveries for notes.

Statistical Tables : *See* Pls. 40, 45, 46, 46a, and Diagram : Pl. 52.

Statistical Note : The largest production of antimony comes from the Northcote and Woodville Mines, nr. Hodgkinson, the total yield from these places, to the end of 1912, being 2,697 tons, valued at £33,294. The next highest yield is from the Neerdie Mines, near Gympie, which produced 1,036½ tons, having a value of £12,033. Smaller outputs have been derived from Cocoa Creek and from Ravenswood. When compared to the total estimated value of the whole antimony production of the State up to the end of 1912 the yield of the metal at the Hodgkinson represents 64.50 % ; Gympie, Kilkivan, and Neerdie, 24.78 % ; Cooktown (Cocoa Cr.), 4.91 % ; Eidsvold (McKonkey Cr. or Hungry Hill), 1.15 % ; Herberton and Chillagoe, 2.73 % ; Ravenswood, 1.36 %. The largest quantity of antimony produced in one year (1884) was 748 tons, valued at £6,469, but the year 1907 yielded 511½ tons, valued at £7,863. The total yield of antimony from all sources to the end of 1912 is calculated to be 4,181 tons, valued at £50,953, which is equivalent to 0.05 % of the value of the whole mineral production of the State.

Bibliography : *Principal Ref.* Rands (W. H.), G.S.Q.P. Nos. 59 (1890), 91 (1893) ; Jack (Dr. R. L.), G.S.Q.P. No. 116 (or No. 16, 1884) ; Cameron (W. E.), G.S.Q.P. No. 209 (1907). *See* Geol. Surv. Pub. List for titles.

68. Antimony. *Assoc.with* Silver, Native Copper, Cuprite, Massicot, Copper carbonate, Graphite (traces), in calcite and in siliceous and talcose shales. *Loc.* Dugald Mine, Dugald R., 40 miles N.W. of Cloncurry. *Co.* Argylla ; *Dist.* **Burke.** *Ref.* G.S.Q.P. 10, p. 3 (1885).

69. ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, and Tetrahedrite. *Loc.* Rainbow Copper Lease, Cone Cr., trib. of Duck Cr., 24 miles S.S.W. of Cloncurry. *Co.* Selwyn ; *Dist.* Burke. *Ref.* P.R.S.Q., vol. 4, p. 56 (1887).

70. *See* 73a.

71. ——. Coghlan Antimony Outcrops, middle head of Alice R., 20 miles from Imooza, 108 miles W. of Laura (Cooktown Rail. line). *Co.* Cootah ; *Dist.* **Cook.** *Ref.* A.R.D.M., 1907, p. 48, and Q.G.M.J., vol. 8, p. 430 (1907).

72. ——. 4 miles W.S.W. of Montalbion, 2 miles S.E. of Halpin's Cattle Stn., nr. Albion Cr., br. of Emu Cr., Walsh and Tinaroo Mineral Field. *Co.* Hodgkinson ; *Dist.* Cook. *Ref.* B.D.

72a.—— (native), 3 miles S.W. of Oak Park Stn., about 52 miles S.byE. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy ; *Dist.* Cook. *Ref.* E.O.M. and O.R. (1909).

73. ——. *Assoc.with* Gold, in quartz lode. *Loc.* Mitchell R. Gold and Antimony Mines, 40 miles N.E. of Mungana (Chillagoe Rail. line). *Co.* Wrothain ; *Dist.* Cook. *Ref.* A.R.D.M., 1907, p. 71.

73a.——. Pandanus Cattle Stn., 70 miles (by road) N.byE. of Mt. Emu Plains Stn. *Co.* Clarke ; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 35, p. 2 (1887), and O.R. (1910).

74. ——. Grey Cr., br. of Burdekin R., about 126 miles W. of Townsville. *Co.* Clarke ; *Dist.* Kennedy North. *Ref.* O.M.

75. ——. Mt. Bona, nr. Mt. Fox, nr. Kangaroo Hills Stn., 30 miles W.S.W. of Ingham. *Co.* Wairuna ; *Dist.* Kennedy North. *Ref.* B.D.

76. Antimony. In lode formation. *Loc.* Mt. Dora, 4 miles W. of Kangaroo Hills Stn. *Co.* Wairuna (*ante*). *Ref.* A.R.D.M. 1893, p. 98.

——. *See also under* names of MINERALS mentioned above.

Antimony, Occurrence of. Assoc.with Gold in Queensland. *See under* Gov. Ming. Jour. Report No. 33.

Antimony Cr., Munburra, Starcke Goldfield. *Min.Ref.* Gold (alluvial), *see* 3200A.

—— Oxides. *See* Cervantite, Valentinite.

—— Sulphides. *See* Stibnite. *See also* Chalcostibite, Bournonite, Pyrargyrite, Stephanite, Tetrahedrite.

Antonio's Mt., Mt. Morgan (Crocodile) Goldfield. *Min.Ref.* Gold, *see* 4359.

Antrim Bore. *See under* Artesian Bores. No. 405.

Apatite. *Compo.*, phosphate of lime. *Colour*, usually greenish and yellowish. *Lustre*, vitreous. *H* = 5. *Sp.gr.* = 3—3·2. *Contents* (*max.*), Phosphoric Acid 42 per cent.

USES: *See note under* Calcium.

GEOLOGICAL NOTE: The only extensive area containing Apatite so far discovered is that about Keppel Bay, where the mineral is in association with Turquoise. It occurs as minute veins and irregular patches in pre-Permo-Carboniferous slates and quartzites, but the percentage of phosphoric acid is very small when these veins and patches are sampled in bulk.

77. ——. Wandoo Cr., trib. of Muldiva Cr. (Walsh R.), Chillagoe, 139 miles (by rail) W.S.W. of Cairns (Chillagoe and Cairns Rail. line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 65 (1900).

78. —— (crystals). *Assoc.with* Plagioclase, in diorite. *Loc.* Plant's Range, Charters Towers, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 71 (1887).

79. ——. Curtis Is., between Keppel Bay and Port Curtis, 5 miles N. of Gladstone. *Co.* Deas Thompson; *Dist.* **Port Curtis.** *Ref.* G.S.Q.P. 190, p. 11 (1904).

80. ——. *Assoc.with* Turquoise. *Loc.* Emu Park, 32 miles (by rail) N.E.byE. of Rockhampton (Central Rail. line). *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q.P. 190, p. 10 (1904).

81. ——. *Assoc.with* Green Turquoise, in slate and quartzites. *Loc.* Keppel Rocks, Keppel Bay, Rockhampton. *Co.* Livingstone (*ante*). *Bulk Sample Assay:* Phosphoric acid = 14 per cent. *Ref.* B.D.

82. ——. Yeppoon, 24 miles N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q.P. 190, p. 10 (1904).

Apex Reef, Twelve-mile, Croydon Goldfield. *Min.Ref.* Gold, *see* 3557.

Aplin (C. D'O. H.), late Gov. Geologist of Southern Queensland.

GEOLOGICAL REPORTS (out of print)—

(1) On the Geological and Mining Features of the Gympie Goldfield (1868). First Progress Report.

(2) Second Progress Report, dated 10th August, 1868.

(3) On the Gold-bearing Country to the East of D'Aguilar Range, and Neurum-Neurum and Delaney's Creeks and surrounding country as far as Stanley River. Third Progress Report (1868).

(4) On the Examination for Gold of the Country South of the Bunya Bunya Range, between the River Brisbane and the Coast, including some Observations on the Gold Deposits at Jimna and Goroomjan. Fourth Progress Report (1869).

(5) On the Talgai Goldfield. Fifth Progress report (1869).

(6) On the Auriferous Country of the Upper Condamine, embracing the "Diggings" at Talgai, Thane's Creek, Canal Creek, and Lucky Valley. With Geological Map. Sixth Progress Report (1869).

(7) On the Geological and Mineral Features of a part of the South and North Portions of the Burnett District, Queensland. Seventh and Final Progress Report (1870).

Note.—All the above Reports are published as Parliamentary Papers.

Apophyllite. *Compo.*, Hyd. silicate of lime (a zeolite). *Colour*, white, grey. *Lustre*, pearly. *H.* =4·5—5. *Sp.gr.* =2·3.

83. ——. In basalt. *Loc.* Evelyn Run, 11 miles S. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

84. ——. In basalt. *Loc.* Jump-up Mine, Herberton Road, 9 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

85. ——. In vein of quartz in granite country. *Loc.* Hidden Treasure Mine, S. side of Mundic Cr., 24 miles S.S.W. of Rockhampton (Mt. Morgan Rail. line). *Co.* Raglan; *Dist.* **Port Curtis.** *Ref.* B.D.

Apple-tree Lease, Mt. Cannindah. *Min.Ref.* Gold, *see* 3657; Iron Pyrites, 5021; Limonite, 5837; Silver, 7443.

Appleton's Claim, Linklater's Lead, Clermont. *Min.Ref.* Coal, *see* 1675; Gold (alluvial), 3336.

Aspley Cr., br. of Wolfang Cr., Clermont. *Min.Ref.* Gold (alluvial), *see* 3296.

Aquamarine (bluish-green), *var. of* Beryl, *which see.*

Arabella Run Bore. *See under* Artesian Bores. No. 140.

Arch Rock. *See under* Keppel Bay Islands.

Aragonite. *Compo.*, carbonate of lime. *Colour*, usually white. *H* =3·5—4. *Sp.gr.* = 2·9. *Contents* (*max.*), Lime 56 per cent.

86. ——. *Assoc.with* Calcite, in pipes. *Loc.* Biggenden Mine, Mt. Biggenden, 5 miles S. of Degilbo, 4½ miles W. of Biggenden, Gayndah br. Rail. line. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 60, p. 2 (1890).

87. ——. Chillagoe, 139 miles W.S.W. of Cairns, Cairns-Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 65 (1900).

88. ——. Goodar Stn., Goondiwindi, 115 miles W.byS. of Warwick. *Co.* Marsh; *Dist.* **Darling Downs.** *Ref.* G.S.M.

89. ——. Newellton (Silver Valley), 10 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills, br. Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 65 (1900).

90. ——. In basalt. *Loc.* Wolfang Run, 15 miles N.E. of Clermont. *Co.* Clermont. *Dist.* **Leichhardt.** *Ref.* G.S.M.

91. ——. In bed above clay ironstone. *Loc.* Fassifern, 8 miles W. of Munbilla Rail. Stn. (Fassifern br. line), 56 miles (by rail and road) S.W.byS. of Ipswich. *Co.* Churchill; *Dist.* **Moreton.** *Ref.* L.C.B.

Aramac Div. Bd. Bores. *See under* Artesian Bores. Nos. 110, 111, 114.

—— Run Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 141-143.

—— Township Bore. *See under* Artesian Bores. No. 111.

Aramara Rail. Stn. (7 miles from) (Gayndah line). *Min.Ref.* Cervantite, *see* 1309; Stibnite, 7652.

Arbinjoe Cr., br. of Sloper Cr., trib. of Walsh R. *Min.Ref.* Actinolite, *see* 4860; Atacamite, 129; Cuprite, 2431, 2432; Galena, 2791; Hematite, 4713; Iron Pyrites, 5074; Malachite, 6226, 6230; Pyrolusite, 7117; Tenorite, 7723; Tetrahedrite, 7763; Tile Ore, 2550.

Arbouin, nr. Mungana Rail. Stn. *Min.Ref.* Cassiterite, *see* 830; Copper Phosphate, 2058.

Arbouin Copper Mines, nr. Walsh R., nr. Mungana. *Min.Ref.* Azurite, *see* 186; Chalcanthite, 1318; Copper Carbonate, 1883; Cuprite, 2425; Gold, 3668; Ironstone, 5517; Malachite, 6211; Scorodite, 7363; Tetrahedrite, 7760.

Arbouin and Party's P.A., Dargalong. *Min.Ref.* Cerussite, *see* 1195; Minium, 6582.

Arbouin's Gully, Stanthorpe. *Min.Ref.* Amethyst, *see* 7168; Cairngorm, 7176; Cassiterite, 985; Beryl, 293; Diamond, 2575; Garnet, 3117; Hyacinth, 8233; Rock Crystals, 7189; Sapphire, 2348; Spinel, 7578; Topaz, 7793; Tourmaline, 7858; Zircon, 8233.

Archbold's Tin Claim, Annan Tinfield. *Min.Ref.* Cassiterite, *see* 827.

Archer Co. Cook Dist.; *see map*, Pl. 8.

—— (Highland Mary) Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3524.

—— Reef, Targinie Goldfield. *Min.Ref.* Gold, *see* 4297A; Mispickel, 6800A; Silver, 7527B.

Archer River Tinfield. *See maps*, Pls. 8, 9. Twenty miles E.byS. of Mein Tel. Stn. *Min.Ref.* Cassiterite, *see* 775. *See also under* Gov. Min. Jour., Report No. 81.

Archerfield Bores. *See under* Coal Bores.

Ard Righ Mine, Star R. (Argentine) Mineral Field. *Min.Ref.* Galena, *see* 2982; Ironstone, 5569; Minium, 6605.

Ardath M.L. (656), Mt. Hope Group, Cloncurry. *Min.Ref.* Chrysocolla, *see* 1523; Copper Pyrites, 2204; Covellite, 2375; Iron Pyrites, 5131; Malachite, 6265.

Ardine Bore. *See under* Artesian Bores. No. 414.

Ardoch Lease Bores. *See under* Artesian Bores. No. 144.

Area of Queensland, and Districts. *See under* Districts.

Argentiferous Galena. *See* Galena.

Argentine, *var. of* Calcite, *which see.*

Argentine Silver Field. *See* Star R. Mineral Field.

Argentite. *Compo.*, sulphide of silver. *Colour and streak*, blackish lead-grey. *H.* = 2—2·5. *Sp.gr.* = 7·1—7·4. Sectile. *Contents* (*max.*), Silver 87 per cent.

92. ——. *Assoc.with* Gold and Redruthite. *Loc.* Commonwealth Mine, nr. Mt. Havilah, 2¾ miles S.S.W. of Degilbo (Gayndah Rail. line). *Co.* Cook; *Dist.* **Burnett.** *Ref.* A.R., p. 58 (1906).

93. ——. Don Jon Bismuth Mine, nr. Mt. Havilah, 2½ miles S.S.W. of Degilbo (Gayndah Rail. line). *Co.* Cook (*ante*). *Assays:* Gold = trace; Silver = 1 oz. 18 dwt. per ton; Gold = trace; Silver = 3 oz. 13 dwt. 13 gr. per ton. *Ref.* A.R., p. 59 (1906).

94. ——. *Assoc.with* Galena and Stibnite. *Loc.* Cumnor Silver Lease, Silverfield, 1 mile S. of Montalbion, 7 miles S.W. of Stannary Hills (Chillagoe br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 4, p. 46 (1887).

95. ——. Dargalong, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 50 (1900).

96. ——. Comstock Mine, Lappa Junction Rail. Stn. (Chillagoe line), 102 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 51 (1900).

97. ——. Paisley Silver Mine, Muldiva, 6 miles S.W.byS. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

98. ——. *Assoc.with* Minium, Siderite, and Galena. *Loc.* Target Silver Mine, Dry R., nr. Newellton, 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 46 (1887).

Argonaut Lease, Grass-tree Goldfield. *Min.Ref.* Gold, *see* 4108.

Argyll Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 881; Copper Carbonate, 1889; Copper (native), 1991; Wolfram, 7948.

Argylla Ck. *See* Pl. 23. Heads in the country about 38½ miles W.byN. of Cloncurry, and flows N.W. to join the eastern branch of the Leichhardt River, 14 miles E. of Burketown, and 44 miles W. of Cloncurry. *Min.Ref.* Copper Carbonate, *see* 1867; Cuprite, 2377; Malachite, 6069; Redruthite, 7202; Tetrahedrite, 7750.

—— Co. Burke Dist.; *see map*, Pl. 20.

—— Group, Cloncurry. Includes Argylla M.F., Argylla N.W. and S. Leases, and Princess E., S., and N. Leases. *Min.Ref.* Azurite, *see* 150; Copper Carbonate, 1867; Cuprite, 2377; Malachite, 6069; Redruthite, 7202; Tetrahedrite, 7750.

—— Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1064; Copper, 1844.

—— M.F., Cloncurry. *Min.Ref.* Azurite, *see* 150; Copper Carbonate, 1867; Cuprite, 2377; Malachite, 6069; Redruthite, 7202; Tetrahedrite, 7750.

Argylla and Dugald Waters (on hill on divide between), Cloncurry. *Min.Ref.* Manganese-dioxide, *see* 6386.

Armstrong and Carter. Report on Queensland Silver-Lead Mines, Ltd., Lawn Hills. Q.G.M.J., vol. 2, p. 329 (1901).

Armstrong Gully, Top Camp Diggings, Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3177.

Armstrong's Sel., Gympie. *Min.Ref.* Psilomelane, *see* 7106.

Armytage's Bores. *See under* Artesian Bores. Nos. 134, 303.

Arnica Sub-artesian Bore. *See under* Artesian Bores. No. 338.

Arrabury Run Sub-artesian Bore. *See under* Artesian Bores. No. 145.

Arsenates; cobalt, *see* Erythrine; copper, *see* Olivenite; iron, *see* Scorodite; lead, *see* Mimetite.

Arsenic (As.). *Atom.Wt.* = 75·0. *Sp.gr.* = 5·72. *Colour*, steel-grey. Brittle.

USES: Extensively used in hardening lead in the manufacture of shot. Its compounds are used variously in poisons, sheep and cattle dip, fruit spray, pigments, dyes, etc., etc. Mispickel is the common source of the metal, the oxide (white arsenic) being extracted as a furnace by-product in the roasting of Mispickel containing gold, silver, or cobalt.

MINERALS: *See* Arsenic (native), Arsenolite, Erythrine, Lollingite, Mimetite, Mispickel, Olivenite, Proustite, Scorodite.

MINERAL NOTE: Native Arsenic commonly occurs associated with gold at Gympie, and Mispickel is frequently found with gold and silver ores and wolfram in many parts of the State. Associated rocks include slates, shales (Palæozoic), diorite, granite, &c., &c.

Arsenic (native). *Compo.*, arsenic, nearly pure. *Colour*, tin-white. *H.* = 3·5. *Sp.gr.* = 5·6-6.

99. ——. Dargalong Silver-Lead Mines, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* B.D.

99A. ——, with Gold, in quartz reef. *Loc.* Mary Lou Mine, 3 miles S.W. of Charters Towers. *Co.* Davenport; *Dist.* **Kennedy North.** *Ref.* E.O.M.

100. ——. *Assoc.with* Gold and Manganese-dioxide. *Loc.* Long Tunnel P.C. Mine, Kilkivan, 48 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.M.

101. —— in quartz reef. Phœnix Golden Pile Mine, Gympie Goldfield, 106 miles N.byW. of Brisbane, North Coast Rail. line. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.M.

102. —— containing gold, in quartz reef. *Loc.* Smithfield 1 N. Mine, Gympie Goldfield (*ante*). *Ref.* B.D.

103. —— not gold-bearing, in quartz reef. *Loc.* Two-mile Gold Mines, 424-feet level, Gympie Goldfield (*ante*). *Ref.* G.S.Q.P. 175, p. 4 (1902).

Arsenical Pyrites, *syn.* Mispickel, *which see.*

Arsenides. Iron, *see* Lollingite; *see also* Mispickel.

Arsenolite, *syn.* White Arsenic. *Compo.*, oxide of arsenic As_2O_3. *Colour*, white. *Taste*, astringent, sweetish. *H.* = 1·5. *Sp.gr.* = 3·7. *Contents* (*max.*), Arsenic 75 per cent.

104. ——. Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn., 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

Arsenopyrite, *syn.* Mispickel, *which see.*

ARTESIAN BORES (For Table of WATER ANALYSES *see* page 70).

Include bores sunk by Water Supply Department, Railway Department, Public Estates Improvement Branch, Local Authorities, and Private Persons.

(Based on Table in Annual Report of Water Supply Department for 1911 and from data in Queensland Geological Survey Office, Brisbane.)

NOTE.—Annual Reports of Water Supply Department, from 1897 to 1911, contain diagrammatic sections of the bores.

References—

C Flow is controlled.
D Shallow bore deepened.
V Bore has valve attached.
R Unreliable measurement.
P Pump.
SP Steam pump.
W Windmill.
Wh Whip or Whim.
L Altitude measured by Spirit Level (other Altitudes by Barometer).
Black Type—*See* Analyses in Table following.
* Notes at end of Table of Water Analyses.
a 1st water bed; *b* 2nd; *c* 3rd; *d* 4th; *e* 5th; &c., &c.

GOVERNMENT BORES.

(A) SUNK BY WATER SUPPLY DEPARTMENT.

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Adavale Town	**Adavale***	25° 54′	144° 36′	1900	760	3,398	*e* 3,365	110	V 990,900			
2	Afton Downs Run ..	Warianna* (*abandoned*) ..	21 6	143 56	1885-86	895	482	..	..	..	..	183	120
3	Alpha Run	Stewart's* (*abandoned*) .	24 15	146 27	1888-89	1,560	2,000						
4	Bando Parish	**Bando***..	27 31	145 34	1897	L 893	2,081	*c* 1,706	119.5	V 677,900	48 to 51		
5	Barcaldine Rly. Stn. ..	Railway*	23 33	145 17	1897	L 874	691	645	100	C 62,200	8 to 10		
6	Bedourie Town	Bedourie, No. 1* (*ab'd*) ..	24 22	139 29	1904-05	..	429						
	Ditto	Bedourie, No. 2	24 22	139 29	1905	..	1,314	*f* 1,280	112	V 2,649,400	134		
7	Binjour Plateau	1. Portion 17 (*abandoned*) ..	..	..	1906	..	276	dry					
	Ditto	2. ditto 9	..	..	1907	..	275	*b* 258	..	..	..	238	W 6,300
	Ditto	3. ditto 5	..	..	1907	..	257	*b* 255	..	..	..	244	W 4,800

NOTE.—*References* to letters before the figures and after names are at the beginning of Table. *Notes on Bores* at end of Table of Water Analyses.

TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
8	Blackall District	Middle Park*	24° 28′	145° 36′	1909-10	L 994	3,000	? 2,875	139	V 1,301,000	86		
	Blackall Town	Dickson's*	24 25	145 27	1885-88	L 924	1,663	1,645	119	C 291,000	64 to 77		
9	Brisbane	Racecourse* (*abandoned*) ..	27 25	153 3	1889	L 33	1,781	1,340	88	8,228	5		
10	Brixton Railway Station	Central Railway, 379 m.* ..	23 32	144 57	1888	L 866	978	*b* 950	109	V 7,900	14 to 19		
11	Burketown Town ..	Burketown*	17 44	139 32	1896	L 14	2,304	? 2,300	155	V 155,560	60		
12	Camooweal Town.. ..	**Camooweal**	19 55	138 7	1896-97	..	300	250	85	..	..	212	74,000
13	Charleston Parish ..	Portion 107v	..	..	1907	..	70	..	..	..	..	..	good
	Ditto	ditto 109v (*abandoned*) ..	..	..	1907	..	116	dry					
	Ditto	ditto 110v	..	..	1907	..	131	..	..	..	..	118	good
	Ditto	ditto 115v (*abandoned*) ..	..	..	1907	..	136	dry					
14	Charleville Town	Charleville*	26 24	146 14	1889-90	L 979	1,371	*c* 1,310	104	C ? 3,000,000	79		
15	Clermont Town	Clermont* (*abandoned*) ..	22 49	147 38	1889	876	323	..	..	..	..		
16	Cloyna and Murgon Parish	1. Murgon (*abandoned*) ..	26 10	151 55	1906	1,580	277	dry					
	Ditto	2. ditto	26 9	151 56	1906	1,315	275	*a* 256	..	..	..	64	6,400
	Ditto	3. Res. of Por. 68	..	..	1908	..	300	..	..	..	..	? 95	small
	Ditto	4. Murgon	..	..	..	..	?	..	..	..	..	44	12,000
17	Croydon Town	Croydon* (*diamond drill*) ..	18 12	142 15	1888	..	111	60	..	..	..	..	uncertain
18	Cunnamulla Town ..	Cunnamulla*	28 4	145 41	1888-01	620	D 1,800	*c* 1,650 ?	107	C 1,028,000	93 to 99		
19	Cushnie Parish	Portion 6	..	..	1907	..	80	..	..	..	..	..	good
	Ditto	ditto 3 (*abandoned*) ..	..	..	1907	..	99	dry					
	Ditto	ditto 4 (*abandoned*) ..	..	..	1907	..	99	dry					

20	Dalby District	1. Maida Hill*	27	12	151	16	1906	..	149	*a*	66	..		..	..		54		20
	Ditto	2. ditto	..		..		1906	..	34	*a*	34	..		..	..		28		19,200
	Ditto	3. ditto	..		..		1907	..	24		..	..		..	..		9	not tested	
	Ditto	4. ditto	..		..		1906	..	103		..	..		..	..		..		3,200
	Ditto	5.* ditto	..		..		1905	..	88		..	..		..	..		..		5,040
	Ditto	6.* ditto	..		..		1906	..	156		..	..		..	..		..		1,200
21	Dalby Town	**Dalby***	27	10	151	17	1900-02	1-127	2,500	*e*	1,553	101	V	25,675					
2	Delta Cross Roads ..	Delta*	23	55	145	46	1886	..	159	*c*	155	..		..	..		48	Wh	11,000
23	Eromanga District ..	Mount Margaret*	26	54	143	18	1887-88	..	582		61	..		..	..		..		17,280
24	Eromanga Town	Eromanga, No. 1*	26	40	143	15	1903-06	..	2,612	*a*	1,640	117		10,660	7½				
	Ditto	**Eromanga, No. 2**	26	40	143	16	1906-09	..	4,270	*f*	4,256	198	V	256,820	219				
25	Gayndah District ..	..	..		..		1907	..	237	*b*	220	..		..	..	?	35		4,800
26	Hughenden District ..	Mountain Ck. (*abandoned*) ..	20	59	144	13	1886	..	490	dry									
27	Hungerford Town ..	1. (*abandoned*)*	29	0	144	24	1901	..	318	*a*	22	..		..	..		..	salt	
	Ditto	2.*	..		..		?	..	768	*a*	489	..		..	..		..		29,000
28	Jericho Town	Jericho (*abandoned*)*	23	36	146	8	1886-87	L1,148	234		169	..		..	..		..		3,600
29	Jondowaie District ..	1	..		..		1906-07	..	D 274	*c*	..	..		..	..		48	W	4,500
	Ditto	2.	..		..		1906-07	..	D 325		261	..		..	..	?		W	480
	Ditto	3.	..		..		1906	..	133		..	..		..	..	?			6,000
	Ditto	4.* (*abandoned*)	..		..		1906	..	152	dry									
30	Kynuna Town	Kynuna*	21	35	141	55	1904	? 655	2,221	*u*	2,086	150	V	880,150	29				
31	Laidley Town	Laidley* (*abandoned*)	27	37	152	22	1889-90	? 330	2,512		..	..	small	1,600					
32	Logie Plains	1.*	26	32	150	56	1905	..	145	*a*	143	..		..	..		113	W	5,760
	Ditto	2.*	26	31	150	54	1906	..	140	*a*	116	..		..	..		100		9,360
33	Mackunda Town	Mackunda	22	30	141	20	1911	..	1 815		1,674	142		837,000					
34	McEuen Parish	Portion 321v	..		..		1905	..	82	soakage									
	Ditto	ditto 317v (*abandoned*) ..	..		..		1905	..	176										
	Ditto	ditto 350, No. 1	..		..		1905	..	97		..	..		..	..	?		good	
	Ditto	ditto 350, No. 2	..		..		1906	..	102		96	..		..	..		87	good	
	Ditto	ditto 402v (*abandoned*) ..	..		..		1907	..	102	dry									
	Ditto	ditto 405v	..		..		1907	..	42		..	..		..	..		..	good	
	Ditto	ditto 404v	..		..		1907	..	78		..	..		..	..		..	good	
	Ditto	ditto 415v	..		..		1907	..	70		..	..		..	..		40	good	
	Ditto	ditto 87	..		..		..	..	80		..	..		..	..		..	small	
	Ditto	ditto 31	..		..		..	..	45		..	..		..	..		25	good	
	Ditto	ditto 68	..		..		1907	..	80		62	..		..	..		..	soakage	
	Ditto	ditto 70 (*abandoned*) ..	..		..		1907	..	83	dry									
	Ditto	A.F. 4282	..		..		..	..	80		..	..		..	..		64	good	
35	McKinlay Town	**McKinlay***	21	16	141	18	1890-91	570	1,002	*b*	900	108		214,850	31½ to 55				

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
36	Middleton Town	Middleton*	22° 21′	141° 33′	1903	565	2,361	*k* 2,250	152	V 954,460			
37	Mitchell Town	**Mitchell*** (coal bands) ..	26 29	147 58	1908	L1,110	1,405	*m* 1,270	96	205,000			
38	Muckadilla	Muckadilla*	26 35	148 23	1889-98	L1,173	D3,762	*b* 3,237	120	23,000	14		
39	Muttaburra District ..	Griffith's* (*abandoned*) ..	22 41	144 41	1885-86	..	298	..	..	..	..	87	1,500
40	Muttaburra District ..	Govatt's* (*abandoned*) ..	22 36	144 33	1885	..	96	dry					
	Ditto	Bangall Creek*	22 33	144 24	1886	..	296	..	..	..	..	66	3,300
41	Muttaburra-Winton Road	**Bradley's***	22 37	144 2	1883-84	..	345	97	..	..	..	89	P 12,000
	Ditto	Darr* (*abandoned*)	22 34	143 47	1884-86	800	255	..	..	..	..	80	2,500
42	Nive Parish	Darby Point* (*abandoned*) ..	25 14	146 28	1887-88	L 1,435	662	412	..	..	..	40	poor
43	Normanton Town ..	**Normanton***	17 40	141 4	1894-95	L 22	2,330	2,014	151	C ? 270,000	? 42		
44	Prairie Town	**Prairie***	20 52	144 36	1894-95	L 1,418	1,395	770	..	..	..	220	SP 18,000
45	Rockhampton Town ..	N. Rockhampton*(*abandoned*)	23 21	150 31	1889-91	L 24	2,046						
46	Roma Town	**Roma, No. 1***	26 34	148 46	1897	L 1,029	1,678	*a* 700	98	C 56,950	20		
	Ditto (8 coal seams) ..	**Roma, No. 2***	26 34	148 46	1899 00	L 1,028	3,710	*c* 1,290	104	C 198,300	20		
47	St. George Rd., Bollon ..	**65-Miles*** (*from St. George*) ..	27 58	147 44	1889-91	? 800	2,362	*b* 2,362	115	V 104,620	63		
48	St. George Town	**St. George***	28 2	148 35	1902-04	L 659	2,709	*h* 2,690	134	V 576,100	153		
49	Sesbania Run	Stack's* (*abandoned*)	21 33	143 21	1885-88	..	986	217	..	..	..	no fresh water	
50	Tambo Town	Tambo*	24 53	146 15	1888-02	L 1,317	D2,450	*d* 2,425	118	V 774,930	25		
51	Thargomindah District ..	Patterson*	28 24	144 0	1909	620	1,740	*l* 1,546	150	V 2,561,230			
	Ditto	Tinderry*	28 1	144 4	1909-10	545	2,500	*m* 2,470	160	V 3,629,650	162 to 183		

52	Thargomindah Town	Thargomindah*	27	59	143	48	1891-93	L 425	2,650	*b*	2,635	166	C	670,000	270		
53	Wallumbilla District ..	Village Settlement	26	33	149	9	1900-01	1,062	1,546	*i*	1,350	92	V	93,000	6½		
	Ditto	Pickenjennie	26	34	149	6	1901	1,048	1,435	*d*	1,420	94	V	177,680	10½		
54	Wellshot Railway Station	Wellshot* (*abandoned*) ..	23	29	144	31	1888-89	701	1,160								
55	Westbrook	Reformatory*	27	37	151	48	1903	..	101	?	60						
56	Westlands Run	Thomson Watershed* ..	23	58	144	6	1891-93	L 746	D3,319		3,207	155		13,800	30 to 78		
57	Winton-Boulia Road ..	Twelve Mile* (*abandoned*) ..	22	23	142	51	1886-87	..	203		..	..		..	..	203	
58	Ditto	Dunbar No. 1* (*abandoned*) ..	22	14	142	12	1886	..	334		225						
	Ditto	Dunbar No. 2* (*abandoned*) ..	22	14	142	12	1886-87	..	434		..	..		..	..	373	small
59	Windorah Town	Windorah*	25	25	142	39	1902-05	..	4,001	*a*	105	..		..	..	80	very little
60	Winton Town	**Winton***	22	23	143	3	1889-95	L 605	4,010	*c*	3,700	173	C	700,000	117 to 123		
	Ditto	*shallow bore A** (*abandoned*) ..	22	23	143	3	1883	..	350	*a*	336	..		..	..	106	abundant
	Ditto	*ditto B** (*abandoned*) ..	22	24	143	2	1883	..	337		..	..		..	..	90	good
61	Wooroorooka Town ..	Wooroorooka*	28	58	145	43	1900	..	1,570		1,400	..	V	32,580			

(B) SUNK BY RAILWAY DEPARTMENT.

62	Normanton R., 23 m. ..	(*trial,* abandoned*)	17	52	141	53	1888	45	100		..	..		..	..	60	
	Ditto 24½ m. ..	(*trial,* abandoned*)	17	53	141	54	1888	60	60		..	..		..	..	52	
	Ditto 36 m. ..	(*trial,* abandoned*)		..		..	1889	90	110								
63	Northern R., 194 m. ..	Warreah* (*abandoned*) ..	20	49	144	50	1896	L 1,420	494								
64	Mackay Railway	Mackay Railway Station* ..	21	10	149	15	? 1892	L 14	37		..	..		..	..	..	P 300,000
65	Central R., 16 m. ..	**Stanwell*** (Sanderson's) ..	23	30	150	20	? 1898	..	? 250	*a*	196	..	over	10,000			
66	Ditto 133½ m. ..	**Maria Creek***	23	36	148	38	1897-98	? 570	1,003	*a*	415	..	intermit. flow				
67	Ditto 307 m. ..	Jericho No. 1 (*abandoned*) ..	23	36	146	7	1886	L 1,141	110	dry							
	Ditto 307 m. ..	Jericho No. 2	23	36	146	7	1902-03	L 1,146	3,518	*c*	1,730	90		..	..	57	SP 5,000
68	Ditto 321 m. ..	Springs (*abandoned*)	23	34	145	54	1886	1,111	200	dry							
69	Ditto 328 m. ..	Alice (*abandoned*)	23	34	145	48	1885	994	50	dry							
70	Ditto 336 m. ..	Back Creek No. 1*	23	34	145	40	1887	L 973	180	*a*	167	70					
	Ditto 337 m. ..	Back Creek No. 2	23	34	145	40	1905-06	..	1,056	*b*	1.015	..	dribble	..	..	nr. surf.	SP
71	Ditto 354 m. ..	(*trial, abandoned*)		..		..	? 1886	..	?								
72	Ditto 360 m. ..	Lagoon Creek (*abandoned*) ..		..		..	1887	..	200	dry							

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where †—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
73	Western R., 154 m. ..	Dalby Cattle Yards*	27° 11′	151° 15′	1898	1,120	300	..	..	..	..	10	
74	Ditto 372 m. ..	Mitchell*	26 29	147 58	? 1886	1,100	208	*a* 208	..	..	..	9	P 8,000
75	Ditto 411 m. ..	Dulbydilla	26 25	147 22	1885	L 1,444	370	..	..	..	..	180	
76	Cloncurry Railway ..	Marathon Railway Station ..	20 52	143 34	1906	L 881	941	*b* 854	101	238,700	28		
77	Ditto	Nonda ditto ..	20 41	142 28	1907	420	1,295	*h* 1,280	112	364,000	62		
78	Ditto	Julia Creek ditto ..	20 40	141 45	1907	410	1,121	*g* 1,106	122	1,707,500	80		
79	Ditto	Oorindi ditto ..	20 41	141 4	1907	433	678	*d* 632	106	213,450	52		
	(C) SUNK BY THE PUBLIC ESTATE IMPROVEMENT BRANCH, DEPARTMENT OF PUBLIC LANDS.												
80	Adavale	1. Por. 21 (*abandoned*) ..	..	..	1910	..	407	407	..	..	..	14	10,000
	Ditto	2. Por. 3 (*abandoned*) ..	..	..	1910	..	504	504	..	..	..	39	9,600
83	Barmoya	1. nr. Rockhampton (*aban'd*)	..	..	1908	..	64	..	..	..	..	..	5,000
	Ditto	2.* (*abandoned*)	..	..	1908	..	60						
84	Bell Town	Deep bore*	..	..	1908-09	1,573	969	735	..	..	..	131	9,600
	Ditto	1. Shallow (*abandoned*) ..	..	..	1907	..	150	..	..	..	..	..	3,620
	Ditto	2. ditto (*abandoned*) ..	..	..	1907	..	375	..	..	..	..	..	6,000
	Ditto	1. (Well) O'Grady's	..	..	1908	..	89	89	..	..	..	..	P 5,000
	Ditto	2. (Well) Lafont's	..	..	1908	..	100	100	..	..	..	..	3,620
85	Binjour Plateau	1. Por. 182	..	..	1909	..	223	218	..	..	..	120	P 6,000
	Ditto	2. Por. 185	..	..	1909	..	316	..	..	..	..	..	4,800
	Ditto	3.	..	..	1909	..	191	80	..	..	..	80	P 7,200
	Ditto	4.	..	..	1909	..	333	310	..	..	..	..	4,300
	Ditto	5. Por. 14 (*abandoned*) ..	..	..	1910	..	414	318	..	..	..	..	1,200

87	Brigalow Estate	1.*	..	..	1909-10	..	310	280	..	..	..	110		5,160
88	Burncluith	1. Por. 97,* N. of Chinchilla	..	..	1908	..	253	..	..	..	..	128	W	large
	Ditto	2. Por. 19,* ditto	..	..	1908	..	401	193	..	..	..	120	W	14,400
	Ditto	3. Por. 59,* ditto (*aban'd*)	..	..	1908	..	382							
89	Canaga Estate	1. N. of Warra	..	..	1909	..	200	..	..	..	..	..	W	11,280
	Ditto	2.	..	..		..	190	..	..	..	..	..		9,600
	Ditto	3. Por. 54 (*abandoned*)	..	..	1910-11	..	190	183	..	..	..	..		1,440
	Ditto	4 Por. 40 (*abandoned*)	..	..	..	..	372	soak	..	..	..	..		60
90	Cypress Downs	1.	..	..	1910-11	..	2,720	..	138	1,500,000				
	Ditto	2.	..	..	1911	..	523	226						
91	Dulacca Town	1. (*abandoned*)	..	..	1908	..	302	dry						
	Ditto	2 (*abandoned*)	..	..	1909	..	450	150	..	..	..	..		1,440
92	Euthulla	1. Por. 49	..	..	1910	..	439	420	..	..	..	127		9,600
	Ditto	2. Por. 489	..	..	1910	..	425	353	..	..	..	123		12,720
	Ditto	3. Por. 251 (*abandoned*)	..	..	1910	..	360	315	..	..	..	90		9,600
	Ditto	4. Mac's Gully* (*abandoned*)	..	..	1908	..	150							
93	Gogango	1. (*abandoned*)	..	..	1907	..	73							
94	Jimbour	1. Well, Por. 320	..	..	1909	..	38	38	..	..	..	25		good
	Ditto	2. ditto 318	..	..	1909	..	130	dry						
	Ditto	3. ditto 315	..	..	1909	..	97	97	..	..	..	? 55		good
	Ditto	4. ditto 297	..	..	1909	..	70	70	..	..	..	58		good
95	Kaimkillenbun	Well*	..	..	1909	..	79	..	..	..	..	69	W	good
96	Logie Pl'ns, P. of Tuckerang	1. Well, Por. 142	..	..	..	..	89	89	..	..	..	..	W	
	Ditto	2. ditto 8	..	..	..	..	103	103	..	..	..	..	W	
97	Mount Bassett Estate	1. Por. 100v	..	..	1910	..	1,746	980	..	..	..	248		10,000
	Ditto	2. Warooby, Por 153v	..	..	P 1911	..	1,185	310						
98	Mount Mahen	1. Well	N.W.	of Bell	1909	..	28	..	..	..	..	..		9,600
	Ditto	2. Well (*abandoned*)	..	..	1909	..	52							
99	Mount Morris Estate	..	..	..	P 1910	..	1,881	*b* 272	..	..	..	134		
100	Muggleton Estate	1.	..	..	1910	..	401	401	..	..	..	210		14,400
	Ditto	2. (*abandoned*)	..	..	1911	..	380	dry						
	Ditto	3.	..	..	1911	..	490	480	..	..	..	210		12,000
	Ditto	4.	..	..	1911	..	480	480	..	..	..	230		12,000
101	Mungalala Town	..	..	..	1909	..	500	*b* 260	..	..	..	215		10,800
102	Murgon Estate	1. (*abandoned*)	..	..	1907	..	277	dry						
	Ditto	2.	..	..	1907	..	275	267	..	..	..	76	W	6,400
	Ditto	3. (*abandoned*)	..	..	1908	..	300	dry						
	Ditto	4.	..	..	1908	..	79	54	..	..	..	44	W	12,480
	Ditto	5. (*abandoned*)	..	..	1910	..	327	285						

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION. Latitude South.	POSITION. Longitude East.	When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN. Continuous Daily Flow in Gallons when uncontrolled.	ARTESIAN. Static Pressures in Lb., per Square Inch at Surface.	SUB-ARTESIAN. Depth of Water Level below Surface, in Feet.	SUB-ARTESIAN. Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
103	Omrah, P. Logie	..	..	..	1909	..	132	120	..	..	..	101	12,720
104	Perth	1. Por. 36 (*abandoned*)	N.E.	of Tara	1910	..	350	304	..	..	..	80	
	Ditto	2.	..	..	1910	..	131	..	..	..	..	101	W 9,600
105	Tara District	1. Moonie Scrub (*abandoned*)	..	..	1909	1,020	303						
	Ditto	2. ditto (*abandoned*)	..	..	1909	..	400						
	Ditto	3. ditto	..	..	..	..	350	308	..	..	..	80	4,800
	Ditto	1. Myra (*abandoned*)	..	..	1909	..	366	..	..	..	..	118	
	Ditto	2. Myra (*abandoned*)	..	..	1909	..	202						
106	Wallumbilla	1.	..	..	1910	..	325	285	..	..	..	230	W 8,160
	Ditto	2.	..	..	1910	..	380	265	..	..	..	115	12,000
	Ditto	Well	..	..	..	..	174	174	..	..	..	110	W good
107	Weengallon	1.	..	..	P 1911	..	1,089						
108	Wondalli Estate	1.*	..	..	1909	..	246	240	..	..	..	80	12,000
	Ditto	2.	..	..	1909	..	255	200	..	..	..	100	P 7,200
	Ditto	3.	..	..	1909	..	268	268	..	..	..	110	16,800
	Ditto	4.	..	..	1909	..	287	280	..	..	..	100	16,800
	Ditto	5. Por. 71*	..	..	1909	..	418	356	..	..	..	60	9,600
	Ditto	6 Por. 40*	..	..	1909	..	148	140	..	..	..	60	12,000
	Ditto	7. Por. 77	..	..	1909	..	274	..	..	..	..	130	16,800
	Ditto	8. Por. 20*	..	..	1910	..	285	280	..	..	..	95	16,800
	Ditto	Meriwa, Evan's*	..	..	1909	..	148	128	..	..	..	? 128	12,000
109	Woodmillar Scrub	1. (*abandoned*)	..	..	1908	..	200	dry					
	Ditto	2.	..	..	1908	..	330	..	..	..	..	161	6,000
	Ditto	3. (*abandoned*)	..	..	1908	..	57	dry					

LOCAL GOVERNMENT BORES.

	Local Authority.																	
110	Aramac Shire Council	**Nine-mile***	23	6	145	15	1890	745	? 614		500	92½	V	63,500	15 to 19			..
111	Ditto	**Aramac Town***	23	58	145	14	1896	740	1,343	*b*	1,280	104	C	772,800	38½ to 42			..
112	Ilfracombe Shire Council	**Ilfracombe Town***	23	29	144	30	1896-97	L 710	2,450	*b*	1,650	131	V	480,000	31 to 37			..
113	Longreach Shire Council	**Longreach Town***	23	26	144	14	1897	L 625	3,590	*c*	2,400	162	C	205,000	35 to 97			..
114	Aramac Shire Council	Muttaburra Town*	22	35	144	32	1900-01	..	2,707		..	139	C	594,600	? 60			
	Ditto	Twenty-mile	23	15	145	15	1907	..	1,058		..	..	V	460,000				
115	Barcaldine Shire Council	Town bore, Ash street*	23	33	145	17	1893-04	L 871	D2,681	*b*	? 1,320	113½	C	? 450,000	24			
	Ditto	ditto Pine street*	23	33	145	17	1899	L 877	1,422	*b*	1,160	112½	C	? 240,000	19 to 21			
116	Carpentaria Shire Council	Normanton (*abandoned*)	17	14	145	4	1885	20	227									
117	Dalby District	Corporation Well*	27	11	151	16	1898	L 1,114	110	*a*	110	..		..	..	85	W	48,000
	Ditto	Branch Creek*	27	13	151	15	1898	..	120	*a*	120	..		..	..	80		
	Ditto	Oakey Creek*	27	19	151	17	1898	..	100	*a*	100	..		..	..	60		
118	Ditto	Spring Flat*	26	54	151	22	1898	..	80	*a*	80	..		..	..	68		
	Ditto	Jacky's Waterhole*	26	58	151	23	1898	..	75	*a*	75	..		..	..	68		
	Ditto	Wonga Flat*	26	59	151	29	1898	..	120	*a*	120	..		..	..	80		
	Ditto	Square Top*	27	2	151	25	1898	..	100	*a*	100	..		..	..	60		
	Ditto	Meyers'*	27	2	151	29	1898	..	80	*a*	80	..		..	..	30		
	Ditto	Moola Creek*	27	4	151	29	1898	..	120	*a*	120	..		..	..	60		
	Ditto	Macalty's Corner*	27	9	151	20	1898	..	75	*a*	75	..		..	..	65		
	Ditto	Hayfield's Gate*	27	10	151	17	1898	..	75	*a*	75	..		..	..	65		
	Ditto	Malakoff*	26	54	151	23	1898	..	80	*a*	80	..		..	..	65		
	Ditto	1. Mount Halley* (*abandoned*)	..		..		1903	..	160		..	..		..	..	?		3,84
	Ditto	2. ditto	..		..		1903	..	120	*a*	120	..		..	..	40	P	14,400
119	Ditto	Macalister*	..		..		1898	..	70	*a*	70	..		..	..	62		
120	Ditto	Jondowaie Town No. 1*	26	47	151	6	1898	..	140	*a*	140	..		..	..	100		
	Ditto	ditto No. 2*		..		..	1902	..	? 140		..	..		..	..	?	P	3,000
121	Dalrymple Shire Council	Wowra Creek*	21	34	145	14	1895	905	423	*a*	400	82		..	..	8	P	60,000
122	Hughenden M. Council	**Town Bore, No. 1***	20	51	144	11	1893-98	1,094	3,069		1,815	..		..	..	64	SP	120,000
	Ditto	**ditto No. 2***	20	51	144	11	1902	1,094	601	*a*	573	?		..	..	154	SP	64,400
123	Flinders Shire Council	Richmond Town*	20	44	143	9	1899	725	1,189	*b*	1,090	108	R	1,000,000	42			
124	Ditto	Horseshoe Bend	21	8	144	13	1909	..	1,135	*b*	1,010	..		..	..	90	W	large
	Ditto	Broken Dam	21	24	144	12	1911	..	1,773		..	..		?	..	..		?
125	Kargoolnah Shire Council	Yalleroi*	24	4	145	45	1900	L 1,173	961	*b*	700	? 100		..	..	8	SP	large
126	Ditto	Thornleigh*	24	19	144	56	1901-02	L 810	4,003	*e*	3,975	174		340,000	..			
127	Ditto	Glenusk	24	18	145	39	1903-04	L 1,044	2,384	*c*	2,140	..		806,300	..			
	Ditto	Burra Burra	24	37	145	19	1908-10	912	3,073	*e*	2,800	152		392,000	? 100			

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
128	Murweh Shire Council ..	**Morven Town***	26° 24′	147° 7′	1896-97	1,410	2,657	*b* 2,410	100	..	..	60	SP 200,000
129	Roma Municipal Council	Court House (*abandoned*) ..	26 34	148 47	1882	982	500	250	..	..	..	60	
130	Blackall Municipal Council	**Blackall Town, No. 2*** ..	24 26	145 28	1901	L 935	2,590	*c* 2,550	138	V 1,480,000	106		
131	Winton Shire Council ..	Dry Creek	22 14	142 54	1907	..	303	*b* 265	..	..	..	..	P 1,000
	PRIVATE BORES.												
132	Aberfoyle Lease	A Banty*	21 33	145 19	1890	895	494	*e* 490	86	..	..	3	..
	Ditto	B Wowra*	21 27	145 11	1890-91	970	707	?	..	..	..	77	not known
	Ditto	C "P.R."*	21 36	145 25	1892	855	100	*a* 76	82	43,600	? 2		
	Ditto	D Spring Plain*	21 48	145 23	1890-92	855	354	*c* 300	85	26,400	1¼		
	Ditto	E Catherine*	21 35	145 15	1892	890	500	*c* 260	83	..	..	½	
	Ditto	1. Spring Plains	..	..	1905	..	735	..	cool ..	540,000			
	Ditto	2. "P.R."	..	..	1905	..	645	..	cool ..	230,000			
	Ditto	3. Tailor's Plains	..	..	1905	..	848	..	cool ..	540,000			
	Ditto	4.	..	..	1907	..	850	..	..	..	..	8	not pumped
133	Adavale Lease ?	Adavale (*abandoned*)* ..	25 54	144 36	1894	..	100	..	..	..	..	50	salt
134	Afton Downs Lease ..	1. **Knob***	21 7	143 52	1892-95	940	D1,880	*a* 1,560	114	30,000			
	Ditto	2. **Afton***	20 59	144 1	1892-96	925	D1,214	*b* 1,013	103	450,000			
	Ditto	3. **Emu Creek***	21 8	144 3	1892-93	1,010	2,871	*c* 2,540	123½	99,090	about 4		
	Ditto	4. **Cannonball***	20 55	143 52	1895	845	774	*a* 670	98	400,000			
	Ditto	5. **North-east***	20 55	144 2	1895-96	1,000	1,296	*c* 1,140	100	..	..	about 10	
	Ditto	6. Scrubby Creek*	21 2	143 56	1899	..	1.345	1,175	100	400,000			
	Ditto	7. Far Emu*	21 9	144 0	1899	..	1,726	1,508	102	170,000			
	Ditto	8. Stoney Warianna	..	..	1906	..	1,572	..	warm	R 700,000			
	Ditto	At the Bend	..	..	1909	..	2,500	..	..	240,000			
	Ditto	Armytage's	..	..	1909	..	2,850	..	..	100,000			
	Afton Downs Resumption	G.F. 1059	21 7	143 48	aft. 1907	..	? 1,884	..	..	not known			
	Ditto	**Alba Wool Scour Co.**	21 3	144 1	1900	..	? 900	..	..	..	..	?	P good

135	Albilbah Lease	1. Gable End*	24° 52′	144° 12′	1889-02	..	D4,205	..	170	20,000			
	Ditto	2. Jackson's*	24 34	144 21	1889-93	..	3,800	..	very hot	20,500			
	Ditto	3. Pemberley* (*abandoned*)	24 33	144 15	1892-94	..	1,600						
	Albilbah Resumption	..	..	..	1910	..	580	550	..	..	..	?	P 20,000
136	Albion Downs Lease	..	21 32	142 44	1897-99	..	3,033	..	..	R 1,700,000			
137	Alice Downs Lease	1. Croydon*	24 13	145 29	1890-94	L 1,028	2,814	b 2,814	133	C V 373,000	42 to 50		
	Ditto	2. Norwood*	24 10	145 19	1898	L 1,003	3,248	a 3,200	very hot	R V 800,000			
	Ditto	3.	..	..	P 1910	L 1,015	2,000	1,760	..	100,000			
138	Ambathala Lease	Cobb and Co.	25 50	145 15	1906-07	..	? 2,200	..	..	small flow			
	Ditto	..	..	..	1909	..	? 2,200	..	..	R 300,000			
139	Angellala	J. H. Winton's*	..	..	1909	..	730	b 700	..	..	..	?	small
140	Arabella Lease	Highfield*	26 31	146 30	1896-97	L 1,232	3,335	2,828	137	..	..	?	large
	Ditto	Weinholt's	..	..	1909	..	? 250	..	..	..	..	?	P 50,000
141	Aramac Lease	(*three trial bores*)	..	..	bef. 1891	..	514						
	Ditto	1. Lake	22 48	145 22	1891	790	650	570	89½	500,000	11 to 12½		
	Ditto	2. Woolshed*	22 54	145 16	1891	770	1,011	? 750	98	R 800,000	23		
	Ditto	3. Politic G.F. 953*	23 4	145 19	1892	765	900	..	97	950,500	good		
	Ditto	4. Jersey	23 1	145 25	1892	770	729	..	92	355,500	27 to 31½		
	Ditto	5. Ravensbath	22 57	145 25	1892	780	697	..	91	C 677,000	19 to 23		
	Ditto	6. Washpool*	22 54	145 18	1892	770	830	..	97	R 750,000	26½		
	Ditto	6A. (*abandoned*)	..	..	1892	..	260						
	Ditto	7. Greyrock*	23 1	145 31	1893	..	306	..	..	..	..	? 48	SP 100,000
	Ditto	8. Camara	22 54	145 33	1893	..	500	dry					
	Ditto	9. Eagle Flat	..	..	1893	..	300	..	..	..	..	60	
	Ditto	10. Five-mile	..	..	1903	..	80	..	..	R 200,000			
	Ditto	11. Teatree	..	..	1904	..	90	..	..	R 250,000			
	Ditto	12. Friendly Springs	22 58	145 28	1903	..	100	..	..	R 100,000			
	Ditto	13. Top 20 Miles	..	..	1903	..	90	..	..	R 100,000			
	Ditto Resumption	..	..	..	1910	..	1,860	..	..	60,000			
142	Aramac S.W. District	1. Leichhardt G.F.	23 7	145 10	1890	? 800	1,820	..	120	R 250,000	R 50		
	Ditto	2. ditto (Niko) G.F	23 6	145 1	1891	..	2,488	..	138	R 300,000	R 60		
	Ditto	3. ditto (Fusyama) G.F.	23 5	144 56	1892	..	1,467	..	112	R 900,000	R 61		
	Ditto	Leichhardt	..	..	1909	..	1,780	..	..	75,000			
	Ditto	Pawella G.F.	23 2	145 1	1892	..	D1,950	b 1,326	..	R 750,000			
	Ditto	Willoughby, Alexander's	23 10	145 2	1905-06	..	2,661	..	140	300,000	10		
	Ditto	The Meadow G.F. 84	23 9	145 16	1905	..	850	..	..	R 1,000,000			
	Ditto	Park Farm G.F. 33	22 54	145 2	1905	..	1,850	..	..	R 800,000			
	Ditto	Wilton	..	..	1910	..	2,300						
	Ditto	Pendine, H. Cooper's	23 14	145 11	1911	..	1,538	1,370	..	200,000			
	Ditto	ditto H. G. Cooper's	23 11	145 6	1911	..	970						
	Ditto	Auteuil, C. M. M. Foy's	23 11	145 10	1911	..	1,576	d 1,576	..	600,000			
143	Aramac North District	Springdale G.F. 516*	22 44	145 12	1892	778	1,100	b 1,000	101½	795,000	21 to 23½		
	Ditto	Stagmount G.F. 183*	22 48	145 16	1892	785	978	b 900	97	644,500	17 to 20		
144	Ardoch Lease	1. Prairie*	27 31	144 21	1905-06	..	2,604	? e 2,600	152	2,000,000			
	Ditto	2.	..	..	1906-08	..	2,780	..	..	R 2,000,000			

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
145	Arrabury Lease	Murray's Well*	26° 39′	141° 16′	bef. 1896	..	22	*a* 22	..	..	..	14	P large
146	Authoringa and	1. Riversleigh	26 30	146 20	1895-96	L 1,088	1,464	..	..	R 800,000			
	Riversleigh Leases ..	2. Rocky*	26 41	146 47	1896-98	..	3,086	..	..	..	..	65	good
	Ditto	3. Spinifex*	26 47	146 27	1898-99	..	3,060	*a* 1,207	..	R 150,000			
	Authoringa Resumption..	Kurrajong, Calcino's	26 24	146 36	1909	..	1,155	*b* 1,070	..	..	..	119	W large
	Riversleigh ,,	Colombo, Campbell's* ..	26 42	146 16	1909	L 975	1,896	*c* 1,890	118	V 1,069,000	53 to ?		
147	Avington Lease	Station	24 4	144 56	1909-10	..	? 3,260	3,260	..	R 1,000,000			
	Ditto Resumption ..	S. Mursden's	24 2	145 7	P 1911	..	1,200						
148	Avondale and Elenora ..	1. Avondale G.F. 94	28 23	146 26	1893	..	317	..	..	..	..	35	SP 30,000
	Ditto	**2. Elenora G.F. 93* (Bignall's)**	28 23	146 22	1898	..	1,621	..	112	VR 2,500,000			
149	Ayrshire Downs Lease ..	1. Wokingham No. 2* ..	22 0	142 40	1895-97	L 621	4,438	4,360	184	? 350,000			
	Ditto	2. Coongarry No. 3*	21 45	142 31	1898-99	L 751	3,721	*a* 3,200	abt. 160	? 800,000			
	Ditto	3. Wokingham No. 3* ..	21 49	142 36	1899-02	L 756	3,983	..	abt. 160	? 550,000			
	Resumption	Clio G.F. 216	21 38	142 40	1901-02	..	3,745	..	187	250,000			
150	Balaclava	Brunner and McNally ..	locality	not known	1909	..	? 140	140	..	..	..	?	P 20,000
151	Bando Lease	**1. Roto***	27 16	145 30	1893	L 870	2,090	no record	130.7	1,128,900			
	Ditto	2. Juan*	27 26	145 30	1898	L 925	2,075	*b* 2,000	124.5	652,800	42 to 45		
	Ditto	3. Kangaroo Plains*	27 19	145 50	1909-10	L 964	1,673	..	122.5	V 1,761,300	104 to 110		
152	Bando District	Goolburra G.F. 111*	27 34	145 39	1906	L 949	1,950	1,800	116	V 565,800	17 to 19		
	Ditto	Wallen G.F. 102*	27 35	145 43	1905-06	L 915	2,109	1,760	117.5	V 582,500			
	Ditto	Glendilla G.F. 223*	27 43	145 32	1907	..	1,727	..	125	CV 754,900	56 to 59		
153	Barcaldine Downs Lease	1. Twenty-mile*	23 46	144 54	1889-96	L 866	D3,533	3,400	160½	340,000	43 to 49		
	Ditto	2. Greasy or Woolshed ..	23 43	145 5	1893-95	L 873	2,776	2,670	142½	626,700	36 to 41		
	Ditto	3. Portland Boundary ..	..	..	1910	L 813	3,360	..	..	350,000			

154	Barcaldine North District	Brackhill, Cronin's*	23	33	145	19	1892-93	877	1,002	*b*	1,000	? 106½	V	422,300	12 to 17				..
	Ditto	Halfmoon, Brown*	23	29	145	14	1898-99	..	? 2,020	*b*	1,150	95		..	..	28		W	large
	Ditto	1. Fairview, Arthur's	23	29	145	19	1895	..	1,140	*b*	1,000	105	V	232,100	9 to 11				
	Ditto	2. Fairview, Arthur's*	23	29	145	19	1907	..	3,028		2,510	hot		400,000					
	Ditto	3. Braeside, Arthur's	23	29	145	23	1898	..	1,300		..	105		600,000	10				
	Ditto	Woodend, Vance's	23	30	145	20	1899	..	1,482	*b*	1,050	104	?	300,000	? 16				
	Ditto	**Lakeview, Kirby's**†	23	31	145	25	1891-92	875	746	*a*		99½	V	372,000	13 to 16				
	Ditto	D. C. O'Regan's G.F. 109	23	32	145	22	1901-02	..	1,000	*a*	860	warm	R	500,000					
	Ditto	Fox Hall Selection	23	33	145	19	1905	..	997		..	110		400,000	10				
	Ditto	Westbourne, Ferguson	23	32	145	12	1905	L 871	1,620		..	109		243,000	? 10				
	Ditto	Elton Block, Peut's	site	not	known		1909	..	? 2,025		..	..	R	650,000					
	Ditto	Lochingar, J. Arthur's*	site	not	known		1911	..	1,372		750	..		100,000					
155	Barcaldine South District	Alice R. Co-operative*	23	35	145	19	1898	..	1,320	*b*	1,100	112		278,800	13 to 15				
	Ditto	Dunraven*	23	37	145	8	1895-96	L 909	2,450		2,260	135	V	223,600	13 to 15				
	Ditto	1. Jacondol, Campbell's*	23	35	145	26	1895	..	D3,333		..	? 163	R	500,000					
	Ditto	2. Jacondol G.F. 382	23	39	145	23	1905	..	2,276		..	143	R	600,000	? 10				
	Ditto	Woolscour, McLachlin's*	23	33	145	18	1889-96	L 856	D1,184	*b*		110	V	225,400	12 to 13				
	Ditto	Westbourne (Meat W.)*	23	33	145	12	1892-93	L 887	1,798	*b*	1,789	121	CV	256,600	19 to 21				
	Ditto	Walker's Selection	23	36	145	34	1905	..	? 903	*c*	903	..		300,000					
	Ditto	Stibbard's A.F. 601	23	34	145	21	1905	..	1,300		..	? 100		400,000	? 11				
	Ditto	G.F. 282, Buchanan's	23	42	145	22	P1910-11	..	1,600										
156	Barcaldine South District	1. Clover Hills, Curry's*	23	50	145	21	1893-94	L 916	1,705		1,200	90		88,000	13 to 15				
	Ditto	2. P. Curry's		..		..	1908	L 970	2,103		..	..		190,000					
	Ditto	Kyneton, Murden's	23	49	145	24	1898-99	L 936	2,040	*b*	1,960	126		428,000	29 to 30				
	Ditto	Patrick, Richardson's*	23	44	145	17	1896	L 844	2,074	*b*	2,070	132		162,800	51 to 58				
	Ditto	Mathews G.F. 293	23	41	145	14	1902	..	2,100		..	? 125		700,000	? 11				
157	Barclay Downs Lease	1. Younggrove*	20	28	138	19	1901-02	..	306	*a*	223	..		..	..	?		SP	large
	Ditto	2. Worna Creek*	20	13	138	16	1901	..	436	*a*	220	..		..	..	?		SP	large
	Ditto	3. Buckley River*	20	19	138	19	1902	..	390	*a*	227	..		..	..	?		SP	large
	Ditto	4. Deer Park*	20	34	138	22	1902	..	230	*a*	205	..		..	..	?		SP	91,200
	Ditto	5. Donnickmore*	20	30	138	30	1902	..	316	*a*	275	..		..	..	?		SP	large
	Ditto	6. Femoy*	20	37	138	27	1906	..	279	*b*	269	..		..	..	?		SP	55,200
	Ditto	7. Betterly*	20	16	138	36	1906	..	442	*b*	395	..		..	..	?		SP	50,400
	Ditto	8. Beta*	20	23	138	8	1906	..	235	*b*	235	..		..	..	?		SP	52,800
	Ditto	9. Eta*	20	28	138	2	1906	..	212	*b*	212	..		..	..	146		SP	58,000
158	Barcoorah Lease	Blowfly	22	38	145	18	1897	880	741	*b*	420	90		..	..	92			
	Ditto	Shallow bore	..		..		1909	..	72		..	..		..	..	?		?	good
	Ditto	ditto	..		..		1909	..	72		..	..		..	..	?		?	good
	Ditto	ditto	..		..		1909	..	? 150		..	..		..	..	?		?	good
	Ditto	ditto	..		..		1909	..	? 200		..	..		..	..	?		?	good
	Ditto	5. ditto	..		..		1909	..	264		..	..		..	..	?		P	26,400
159	Barenya Lease	1. Nineveh	21	28	144	12	1892-97	..	D1,900	*b*	1,700	115		150,000					
	Ditto	2. Ensay*	21	36	144	0	1893-96	..	D2,800	*b*	2,000	135		2,500					
	Ditto	3. Woolshed*	21	37	144	10	1897	..	2,405	*a*	2,260	..		600,000					
	Ditto	4. Long Paddock	21	29	144	4	1897-98	..	2,400	*a*	1,550	..		70,000					
	Ditto	5. Separation	..		..		P 1907	..	1,350		..	..		2,000					

NOTE—*References* to letters before the figures and after names are at the beginning of Table. *Notes on Bores* at end of Table of Water Analyses.

TABLE OF BORES—*continued.*

			POSITION.							ARTESIAN.		SUB-ARTESIAN.	
Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	Latitude South.	Longitude East.	When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore. in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
160	Beaconsfield Lease	1. Brutus Creek	23° 25′	144° 46′	1893	..	? 2,151	*c* 2,040	129	V 475,000	38 to 39		
	Ditto	2. Cattle Creek	23 19	144 47	1895	..	2,406	..	..	500,000			
	Ditto	3. Meadowland	23 23	144 37	1898	..	2,375	*a* 1,250	..	400,000			
	Ditto	4. Fullerton	23 20	144 43	1898	..	2,200	*b* 2,200	..	450,000			
	Ditto	..	..	..	1911	..	2,340	..	..	100,000			
161	Beaudesert and Strathfield [Leases	A (*abandoned*)*	..	..	1888-89	..	198	*a* 187					
	Ditto	B Strathfield Station*	21 22	140 58	1888-89	560	214	*b* 213	..	..	..	52	Wh 10,080
	Ditto	C Bull Creek*	21 16	140 59	1888-89	? 600	146	146	..	..	..	..	very small
	Ditto	D Fullarton Well*	21 7	140 55	1888-89	? 600	81	80	..	..	..	30	Wh good
	Ditto	E (*abandoned*)*	..	..	1888-89	..	100	dry					
	Ditto	F Sugar Bag*	21 27	141 9	1888-89	..	100	46	..	..	..	..	very small
	Ditto	G (*abandoned*)*	..	..	1888-89	..	14						
	Ditto	H Stoney Creek Well*	21 0	141 12	1890	470	59	nr. surface	cool ..	1,700	nil		
	Ditto	1. **Gidya Creek***	21 9	141 15	abt. 1890	475	857	*a* 830	113	282,200	29 to 60		
	Ditto	2. General's W.H.*	21 17	141 6	abt 1891	572	420	*a* 420	..	..	..	53	P good
	Ditto	3. Beaudesert Station*	21 34	141 5	abt. 1892	685	820	*a* 200	81	..	..	8	
	Ditto	4. **Snake Creek**	21 30	141 14	1895	615	855	*b* 850	115	560,200	35 to 47		
	Ditto	5. Mt. Helen*	21 39	141 12	1895	737	1,067	*a* 850	101	..	..	nr. surf.	
	Ditto	6. **Rangeview Creek**	21 34	141 8	1896	643	592	*a* 550	96	511,600	16½ to 28		
	Ditto	7. **Bluey Creek**	21 17	141 10	1896	522	866	..	100	7,880	3 to 20		
	Ditto	8. Upper Fullarton*	20 57	141 6	1896	535	548	*b* 360	..	..	..	8	very good
	Ditto	9. Holy Joe	20 57	141 10	1896	495	300	*a* 200	92	62,580	3½ to 28		
	Ditto	10. Berwick	20 54	141 6	1896	495	692	*a* 520	102	16,200			
	Ditto	11. Lower Fullarton	..	..	1896	..	562	..	101	70,000			
	Ditto	12. Stoney Creek	..	..	1896-97	? 450	916	..	118	85,000			
	Ditto	13. Nora Creek	..	..	1897	? 520	905	..	100	7,000			
	Ditto	14. Richelieu	..	..	1899-00	..	831	*a* 797	..	6,000			
	Ditto	15. Boat Creek*	..	..	1901	..	143	*a* 135	..	..	..	65	over 10,000
	Ditto	?	..	..	1907	..	? 400						
162	Beechal Lease	1. **Duck Holes***	27 21	144 35	1897-98	..	2,647	2,600	165	R 2,000,000			
	Ditto	2. **Quilbone***	27 2	144 49	1898	..	2,666	2,350	165	R 2,000,000	105		
163	**Beirbank**	..	26 47	145 2	1911	..	?	..	..	? 2,000			

164	Belmont	..	locality	not known	1909	..	240	..	..	..	..	?	P 55,000
	Ditto	..	..	..	1910	..	250	..	..	..	..	?	P 6,000
165	Bendena	1. Bendena	27 44	146 32	1898	..	1,734	1,000	120	3,000,000			
	Ditto	2. **Nebine-Dulla** ?	..	..	1908	..	1,860	..	..	R 3,000,000			
	Ditto	3. Burgess and Co.	..	..	1908-09	..	2,231	..	..	R 2,000,000			
166	Biddenham Lease	Shallow bore	25 48	146 25	1907-08	..	?	..	..	..	..	..	supply
167	Bimerah Lease	1. Bothwell*	24 31	143 39	1895-97	L 710	4,860	*b* 4,250	180	19,320	21½ to 30		
	Ditto (coal bands)	2. Mungerie*	24 8	143 35	1897-00	L 589	4,310	*b* 3,925	186	6,300	4½		
	Ditto	3. Whitewood*	24 19	143 32	1898-00	L 631	5,045	..	190	70,000			
	Ditto	Shallow bore (*abandoned*)	..	..	1907	..	258	no water					
	Ditto	ditto	..	..	1909	..	300	..	..	..	..	?	4,000
	Ditto	ditto	..	..	1909-10	..	400	..	..	..	..	?	fair
	Ditto	ditto	..	..	1910	..	? 600	..	..	..	..	?	?
	Ditto	Neenah Park	..	..	1909	..	300	..	..	..	..	?	P 8,000
168	Binda Lease	W. B. Hamilton's	27 44	147 19	P. 1911		550						
	Bindebango Lease	Bindebango*	27 40	147 23	1898-99	..	2,483	*b* 2,300	130	2,400,000			
	Ditto W. Resump.	Binda, W. B. Hamilton's*	27 44	147 15	1911	..	1,626	*c* 1,550	..	275,000			
169	Bingara Lease	1. Bingara*	28 12	144 37	1893	..	201	*a* 200	? 80	40,000			
	Ditto	2. Tunka*	28 14	144 38	1894	..	213	*a* 194	? 80	20,000			
	Ditto	3. Woonegym*	28 15	144 45	1894	..	148	*a* 148	? 70	48,000	low		
	Ditto	4. Dewalla* (*abandoned*)	28 8	144 43	1894	..	79						
	Ditto Resumption*	Tarko G.F. 3v, Warner's	28 18	144 37	1911	..	1,255	800	..	10,000			
170	Blackall District	Duneira (E. Banks)	24 32	145 32	1901	..	1,764	1,700	..	92,000			
	Ditto	**Woolscour Co.**	24 23	145 29	1906-07	L 931	2,507	*g* 2,431	..	1,250,000			
	Ditto	Kendal	..	..	1910	..	470	..	..	..	..	..	P 18,000
171	Bladensburg*	Marsh Bros. (old well)	22 31	143 3	bef. 1908	..	110	..	..	..	..	60	P 24,000
	Ditto	Gunbarrel Creek	..	..	1908	..	193	..	..	..	..	50	P 5,000
	Ditto	..	..	..	1909	..	120	..	..	..	..	..	2,600
	Ditto	..	..	..	1909	..	?	..	..	..	..	..	P 20,000
	Ditto	..	..	..	1909	..	320	..	..	..	..	..	P 3,700
	Ditto	Gunbarrel Creek	..	..	1910	..	392	..	..	..	..	..	P 7,500
	Ditto	..	..	..	1910	..	320	..	..	..	..	..	P 8,000
	Ditto	Williams Creek	..	..	P. 1910	..	200	..	..	..	..	..	7,000
	Ditto	7.	..	..	1911	..	390	..	..	..	..	..	good
172	Blume's Selection	C. Blume's Selection	..	..	1909	..	317	..	..	..	..	..	P 5,000
	Ditto	2. ditto	..	..	1909	..	307	..	..	..	..	..	P 5,000
	Ditto	3. ditto	..	..	1909	..	?	..	..	..	..	..	P 7,000
173	Boatman Lease	1. **Jubilee***	27 14	146 52	1894	..	1,511	*b* 1,511	108	R 3,000,000			
	Ditto	2. Spring Waterhole*	26 54	146 36	1895-96	..	1,960	..	..	R 2,000,000			
	Ditto	3. Unconditional Sel. 189v	27 2	146 41	1896	..	2,185	..	130	R 2,500,000			
	Ditto	4. **Boatman and Elmina***	27 10	146 36	1897	..	1,744	..	..	2,100,000			
	Ditto	5.	..	..	1909-10	..	1,605	..	118	R 2,000,000			

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
174	Bogunda (Uanda)	1A. (*abandoned*)*	21° 23′	144° 45′	1893	1,090	780	dry					
	Ditto	1. Doncaster G.F., Por. 4v*	21 23	144 45	1893	1,090	895	*a* 845	..	..	..	12	SP 46,000
	Ditto	2. St. Clair G.F., Por. 5v*	21 24	144 50	1893-94	1,073	1,260	*a* 927	94	..	..	140	SP 27,900
	Ditto	..	..	..	1910	..	728	..	..	..	..	..	good
	Ditto	..	..	..	1910	..	520	..	..	..	..	..	good
175	Bon Accord (Dalby)	1. Parish of Myall*	27 12	151 10	1898	..	45	*a* 45	..	..	..	33	48,000
	Ditto	2. ditto *	27 10	151 13	1898	? 1,100	110	10	..	..	..	64	19,200
	Ditto	3. ditto *	27 12	151 12	1898	..	60	*a* 60	..	..	..	48	24,000
	Ditto	4. ditto *	27 7	151 10	1898	? 1,080	190	*b* 90	..	..	..	70	large
	Ditto	6. Parish of Macalister*	27 6	151 10	1898	..	80	*a* 80	..	..	..	77	”
	Ditto	7. Parish of Jimbour*	27 7	151 12	1898	..	120	*a* 120	..	..	..	95	”
	Ditto	8. Parish of Myall*	27 9	151 12	1898	? 1,095	125	*a* 125	..	..	..	105	”
	Ditto	9. ditto *	27 9	151 12	1898	? 1,095	80	*a* 80	..	..	..	74	24,000
	Ditto	10. ditto *	27 9	151 15	1898	..	84	*a* 84	..	..	..	80½	unlimited
	Ditto	11. Parish of Jimbour*	27 7	151 16	1898	..	140	*a* 140	..	..	..	60	”
	Ditto	12. ditto *	27 5	151 18	1898	..	100	*a* 100	..	..	..	82	”
	Ditto	13. Parish of Dalby*	27 9	151 16	1898	..	116	*a* 116	..	..	..	73	”
	Ditto	(20 *shallow bores*)	..	..	1909	..	aver. 60						
176	Bonus Downs Lease	Bonus Downs*	26 42	147 41	1909	..	3,424	..	..	..	..	60	large
177	Boorara and Yuleemya [Leases	1. Bush Spring*	28 19	144 10	1894	..	220	..	..	..	..	at surf.	
	Ditto	2. Colanya*	28 32	144 39	1896	..	196	..	cool ..	75,000			
	Ditto	3. Woolshed*	28 34	144 27	1896	..	? 156	..	cool ..	17,000			
	Ditto	4. Kilcowra	28 33	143 58	1898	..	1,474	..	? 132	1,000,000	? 120		
	Ditto	5. Woolshed, No. 2*	28 33	144 27	1898	..	800	*a* 620	cool ..	20,000			
	Ditto	6. Tunka*	28 18	144 15	1900	..	200	..	cool ..	3,000			
	Yuleemya Resumption	1. Taleroo	28 52	144 11	1894	..	260	..	90	75,000			
	Ditto	2. Potewka (*abandoned*)	28 53	143 57	1895	..	410	*a* 200	..	..	..	salt	
178	Bowen Downs Lease	1. **Kanaka***	22 39	145 5	1890-91	745	970	*a* 940	100	145,000	over 10		
	Ditto	2. **Grange**	22 34	145 4	1891	695	1,370	*a* 1,171	105	about 500,000	38		
	Ditto	3. **Land's End***	22 30	145 12	1891	775	1,112	*a* 680	96	V 287,000	about 10		
	Ditto	4. **Muttaburra road***	22 46	144 54	1891-94	835	D3,308	*b* 3,250	136	..	..	·5	
	Ditto	5. Jabiru	22 15	144 55	1892-94	755	2,402	*a* 1,650	112	V 476,700	17 to 18		
	Ditto	6. Janesland*	22 37	144 54	1895-96	795	2,005	..	124	305,900	10½ to 11		

	Ditto	7. Enoggera*	22	36	144	47	1896	815	2,500	..	130	V 340,000	16 to 17½		
	Ditto Resumption ..	8. Acacia Dns. G.F. 1007* ..	22	49	144	43	1897	755	D3,480	b 2,250	130	V 297,000	22 to 23½		
	Ditto Lease	9. Rankin		..		..	1906	..	1,572	..	..	..	..	at surf.	large
	Ditto	10. Yan Yan		..		..	1907-08	..	2,700	..	..	640,000			
	Ditto	?													
	Ditto	12.		..		..	1909	..	1,452	..	..	R 800,000			
	Ditto	13.		..		..	1909	..	814	..	..	R 300,000			
	Ditto	14.		..		..	1909	..	580	..	..	R 300,000			
	Ditto	15. Sardine Creek		..		..	1910	..	500	..	..	R 1,000,000			
	Ditto Resumption ..	..		..		..	P 1911	..	2,500	..	..	..	..	1	large
	Ditto ,, ..	Adelong, Langdon's		..		..	P 1911	..	60	..	..	..	..	13	good
179	Breadalbane Run	1. Three Sisters	23	42	139	15	1893	..	678	..	..	1,208			
	Ditto	2. Lobb's or Yard*	23	46	139	23	1891	..	420	..	..	300			
	Ditto	3. (*abandoned*)	23	47	139	32	..	..	250	dry					
	Ditto	4. (*abandoned*)	23	51	139	36	..	..	300	dry					
180	Brenda Lease	1. **Brenda No. 1**	28	51	147	19	1905-06	..	2,115	c 2,115	..	2,500,000			
181	Brighton Downs Lease ..	1 **Macartney's Creek** ..	23	19	141	26	1893-94	395	2,396	b 2,380	155	V 773,000	119 to 12		
	Ditto	2. **Macunda Creek**	22	54	141	36	1894-95	475	2,426	a 2,405	153	V 665,000	118 to 12		
	Ditto	3.		..		..	P 1909-10	..	? 2,000	..	..	?			
	Ditto	4. Seighford No. 13	23	2	141	0	1911	..	1,548	..	..	R 2,000,000			
	Ditto	5. Seighford No. 2	23	1	141	30	P 1911	..	1,706	a 230	..	..	..	210	
	Ditto Resumption ..	Lilleyvale G.F. 257	22	36	141	14	P 1911	..	600						
182	Brisbane District	Milton Brewery (*abandoned*) ..	27	29	153	1	? 1889	? 35	600	dry					
	Ditto	Eight-mile Plains		..		..	..	..	110	..	..	..	..	..	P good
	Ditto	Lindum (*abandoned*)*	27	25	153	8	1897	? 45	1,060	..	..	..	..	30	small
	Ditto	Eagle Farm M. P. Co. (ab'd) ..		..		..	1896	..	?						
	Ditto	Wynnum	27	25	153	10	1902	..	? 130						
183	Britannia Station	..		..		..	P 1911	..	?	85	..	..	..	..	4,000
184	Brixton District	H. Peut, G.F. 636	23	31	144	54	?	..	1,440	..	..	600,000			
	Ditto	Freehold	23	27	144	58	1905	..	1,796	..	? 140	400,000	10		
185	Bunda-Bunda Lease ..	1. **Blackbull**	20	12	142	20	1892	535	682	no	97	V 433,000	39 to 60		..
	Ditto	2. **Telegraph***	20	3	142	19	1892-93	446	613	records	106½	340,000	24 to 44		..
	Ditto	3. **Ashe's***	20	14	142	20	1893	536	724		98	431,500			..
	Ditto	4. **Station**	20	5	142	11	1894	510	619	600	98½	897,000	35 to 43		..
	Ditto	5. Culberry	20	8	142	10	1900	..	707	..	..	R 1,000,000			
	Ditto	6. Woolstone*	19	56	142	7	1900	..	780	b 780	..	3,500,000			
	Ditto	7. Kungaberch*	20	8	142	17	1901	..	952	b 950	..	2,900,000			
	Ditto Resumption ..	Gladevale, Mott's G.F. ..	20	17	142	28	1902	..	? 950	..	..	2,700,000			
	Ditto	Pinaba, Begbie's	19	45	142	21	1911	..	680	c 580	..	2,300,000			

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
186	Burenda Lease	1. **Woolshed**	25° 57′	146° 47′	1889-92	1,300	2,130	*b* 1,000	87½	..	..	80	W 30,000
	Ditto	2. **Burenda**	25 46	146 53	1894-95	1,340	3,315	*c* 3,115	133	..	..	?	SP
	Ditto	3. **Gidya Creek***	25 42	146 58	1895-98	1,455	3,840	? 2,600	128	? 156,000	3½ to 5		
	Ditto	4. **Fenian Creek***	25 40	146 49	1899-00	1,295	1,695	*b* 1,600	..	? 500,000			
	Ditto	5. **Burenda Creek***	..	..	1904	..	1,626	1,464	..	363,000			
	Ditto	6. **Burenda**	..	..	P 1910	..	2,501	..	..	100,000			
	Ditto	7.											
	Ditto	8.											
	Ditto	9.											
	Ditto	10. **Burenda**	..	..	..	..	..	..	..	..			
187	Burleigh Lease	1. Surrey*	20 17	143 11	1894-00	..	D 904	..	87	..	..	?	large
	Ditto	2.*	20 17	143 8	1895-01	..	D ? 900	..	..	1,600,000			
	Ditto	3.	20 14	143 7	bef. 1898	..	837	..	..	450,000			
	Ditto	4.*	20 9	143 5	„ 1898	..	779	..	..	..	..	?	large
	Ditto	5. Hazlewood Creek	20 19	143 15	1900	..	917	..	..	500,000			
	Ditto	6. Pandanus Creek*	20 13	143 12	1901	..	771	..	..	..	..	?	large
	Ditto	7. Patience Creek	20 4	143 10	1901	..	517	..	..	..	..	?	P good
	Ditto	8. Woolgar River	..	..	1902	..	600	..	..	600,000			
	Ditto	Summerville, Crothers ?	..	..	1906	..	940	..	..	630,000			
188	Burleigh Resumption	No. 10 Bore	..	..	1900	..	? 800						
	Ditto	Bylong (Nelson's)	20 15	142 53	1901	..	870	..	..	1,200,000			
	Ditto	G.F. 917 (Ranken's)	20 21	142 50	? 1901	..	? 800						
	Ditto	Cudgee G.F. 983	..	..	1902	..	820	..	..	..	..	? 9	P large
	Ditto	Bylong	..	..	1910	..	564	..	..	270,000			
189	Burranbilla or Cunnamulla [Lease	1. **Station***	28 14	145 52	1892	..	1,811	..	119.2	V 1,206,000	87 to 98		
	Ditto	2. Woolshed*	28 8	145 43	1898	..	1,905	..	? 120	CV 1,128,900	92 to 99		
	Ditto	3. North-east*	28 9	145 51	1899	..	1,837	..	120	V 1,440,600	94 to 103		
	Ditto	4. Barry's*	28 19	146 6	1905-06	..	1,779	..	116.7	CV 1,272,600	104 to 121		
190	Burrandilla Lease	Saltbush	26 15	145 46	P 1907	..	? 1,900	..	..	R 1,000,000			

191	Byrimine Lease	1.	20	6	141	1	1898-01	? 350	1,400	..	..	?	50,000			
	Ditto	2.	..		..		1901-02	..	1,330	..	..		10,000			
	Ditto	3. (*abandoned*)..	..		..		1902	..	1,300	no water						
	Ditto	4.	..		..		1903	..	1,300	..	..		2,000			
	Ditto	5.	..		..		1904	..	1,550	..	..		1,000			
	Ditto	6. (*abandoned*)..	..		..		1904	..	800	no water						
192	Caiwarra Lease	1. **Bylang**	28	56	144	49	1891	..	1,872	..	110		25,000			
	Ditto	2. **Guilford**	28	36	144	55	1891	..	768	..	110	V	480,000			
193	Caithness G.F.	1. Wick	21	7	144	6	1898	990	2 250	*c* ?	..		50,000			
	Ditto	2. Watten	21	0	144	8	1899-01	..	D 2,305	..	..		180,000			
	Ditto	3. Reay	21	3	144	11	1900-01	..	2,340	2,300	..		200,000			
194	Caledonia and Hartington	Hartington Bore	22	13	144	48	1888	780	190	*a* 90						
	Ditto [Leases	1 Slasher's Creek*	22	1	145	7	1892-93	805	765	*b* 762	99		50,575	12½ to 16½		
	Ditto	2A. (*abandoned*)*	22	5	145	3	1893	755	454	..	..		..			
	Ditto	2B. Woolshed*	22	5	145	3	1896-98		964	*a* 910	100		200,000			
	Ditto	3. Lothairs	..		..		1899	..	1,540	1,100	..		..	..	4	SP large
	Ditto	4. Endymion..	..		..		1900	..	1,120	..	..		..	..	16	P ”
	Ditto	5. Talisker, No. 2	..		..		1900	..	1,200	..	..		..	..	25	W ”
	Ditto	6. ditto	..		..		1901	..	970	..	..		300,000			
195	Cambridge Downs Lease*	1. Redan	20	34	143	6	1892	736	542	*a* 490	99		314,500	? 55		
	Ditto	2. Bluebush South	20	25	143	13	1892	..	367	*a* 357	93		400,000			
	Ditto	3. Woolshed	20	26	142	56	1892-93	756	D ? 616	*a* 532	98		153,350	44 to 50½		
	Ditto	4. **Ram Creek**	20	29	143	2	1892	706	597	*b* 512	97		250,900	17 to 50		
	Ditto	5. Fig-tree	20	24	143	0	1892	..	540	*a* 415	96		300,000			
	Ditto	6. Boree	20	27	143	9	1893	..	599	*a* 378	94		200,000			
	Ditto Resumption ..	7. **Flagstone***	20	29	142	44	1892	650	841	*a* 806	103		856,000			
	Ditto	8. Cudgee*	20	26	142	39	1892	686	849	*a* 731	103		242,400			
	Ditto	9. Swamp*	20	27	142	49	1892-93	680	765	*a* ? 654	103		421,000	48 to 63½		
	Ditto Lease	10. Bluebush North	20	23	143	12	1898	..	618	*a* 618	cool ..	R	1,000,000	44½ to 64½		
	Ditto	11. Dalzell	20	23	143	7	1899	..	664	..	? 90	R	800,000			
	Ditto	12. Bluff	20	22	142	57	1899	..	? 600	..	..		flow			
	Ditto	13. Lily	20	31	142	52	1899	..	? 600	..	..		flow			
	Ditto	14. Eight-mile Creek ..	20	36	142	52	1899-00	..	? 600	..	..		flow			
196	Cambridge Dns. Resump.	H. B. Blyth's	20	33	142	47	1901	..	838	..	..		1,350,000			
	Ditto	Margaret Cameron's	20	29	142	36	1900	..	1,050	..	..		2,500,000			
	Ditto	Glenisla, C. M. Pegler's* ..	20	30	142	46	1900	..	1,060	..	..		1,190,000			
	Ditto	1. Runnymede* G.F. 517 ..	20	21	142	37	1899	..	800	..	..		800,000			
	Saxbey Resumption ..	2. ditto (Newport's) ..	..		..		?	..	933	..	..		500,000			
197	Cameron Downs Lease ..	..	..		..		P1910-11	..	2,386							
	Ditto Resump.	Zara Selection	21	10	144	20	1909	..	? 1,000	960	..		..	..	1	P large
198	Camoola District West ..	Westbury G.F. 69 and 70 ..	22	55	144	21	1900	..	3,340	..	hot ..		300,000			
	Ditto	Dalmore G.F. 100 and 101 ..	23	2	144	14	1897	..	? 2,300	*a* 1,700	..	?	70,000			
	Ditto Coal bands	1. Talleyrand G.F. 74 ..	23	2	143	58	1898	..	3,870	..	150		30,000			
	Ditto in one of	2. (shallow bore)	..		..		1907	..	? 200	200	..		..	..	?	P 1,500
	Ditto these bores	Yanburra G.F 37 and 43 ..	23	3	144	20	1899	..	2,500	..	148	R	200,000			
	Ditto	Bexley G.F. 104	23	10	144	12	1900-01	..	2,930	2,400	..	V	50,000			

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
199	Camoola District East	Summer Hill G.F. 24	23° 1′	144° 48′	1896	..	? 2,500	*b* 2,500	130	400,000			
	Ditto	Marchmont G.F. 56	23 9	144 42	1894-95	..	2,505	*b* 2,325	148	V 508,000	41		
	Ditto	Rand (W. Rhodes')*	23 7	144 36	1898	..	2,500	..	149	V 475,000			
	Ditto	Fairfield G.F. 208	23 12	144 31	1897	..	2,410	..	? 127	360,000			
	Ditto	Camoola Park G.F. 85	23 4	144 37	1898	..	2,500	..	..	300,000			
200	Canobie Lease	1. Four-mile Creek*	19 44	140 54	1900	..	1,005	896	scalding	? 174,500			
	Ditto	2. Culyer Creek*	19 44	140 48	1900-01	..	1,504	*a* 1,393	..	? 60,000			
	Ditto Coal streaks in one of these bores	3. Middle Creek*	19 44	140 40	1901-02	..	1,945	..	..	280,000			
	Ditto	4. Monkey, No. 1*	19 25	140 41	1904-05	..	1,798	..	..	205,700			
	Ditto	5. Wongarra*	19 35	140 37	1905	..	1,855	..	..	..	..	nr. surf.	SP large
	Ditto	6. Elvira*	19 41	140 36	1905	..	1,830	*b* 1,650	..	300,000			
201	Carandotta Lease	St. Ronan's	21 35	139 5	1894	..	1,006	..	..	..	..	320	
	Ditto	Head Station*	..	..	1909	..	166	..	..	..	..	? 40	P 10,000
202	Cashmere	Old bore, Gunn's	27 39	148 25	1909	..	? 2,330	..	..	R 750,000			
	Ditto	New bore	..	..	1910	..	2,681	..	126	R 2,000,000			
203	Cassillis Lease	1. Mabel Creek*	21 16	143 10	1895	..	2,325	..	very hot	425,000			
	Ditto	2. Cassillis East *	21 14	143 0	1897-98	..	2,700	..	120	876,800			
	Ditto	3. Coleraine*	21 11	143 12	1898-99	..	2,550	..	..	..	..	6	large
	Ditto Resumption	Glenlyon G.F. 861*	21 21	142 55	1900-01	..	2,967	..	142	540,000			
	Albion Downs Resump.	Wetherby Selection	..	..	P1908-09	..	? 2,600						
204	Champion Blocks	1. Owned by*	24 9	145 54	1902	L 1,233	570	..	..	6,000			
	Ditto	2. Saltern Creek*	24 14	145 53	1903	L 1,204	812	..	..	175,000			
	Ditto	3. Station*	24 16	145 56	1903	L 1,275	1,130	..	..	..	..	13.5	W
	Ditto	Henly Park, Adams'	24 6	145 55	..	L 1,321							
	Ditto	1. Sydenham G.F. 6	24 2	145 59	..	L 1,358							
	Ditto	2. ditto	24 3	145 59	..	L 1,332							

205	Charleville District	**Charleville Meat Works***	26	24	146	18	1897-98	L 1,028	1,630	..	104	V 1,496,000	42		
	Ditto	Lockwood G.F. 33	26	16	146	4	1906-07	..	1,350	..	..	V 400,000			
	Ditto	Wallal, Buchanan's*	26	32	146	14	? 1907	L 961	1,800	1,500	..	V 755,000	21 to 33		
	Ditto	**Myendetta, C. Francis***	26	32	146	3	1907-08	L 979	1,890	*c* 1,885	118	V 1,055,000	48 to 51		
	Ditto	1. G.F. 2v, H. J. Carter	26	26	146	0	1909	..	? 320	320	..	..	..	?	supply
	Ditto	2. ditto	..		..		1910	..	440	..	..	..	..	?	good
	Ditto	Mohonga	..		..		P1910-11	..	1,890	..	..	130,000			
	Ditto	Ascot Downs	..		..		bef. 1911	..	1,975	..	..	..	..	..	good
	Ditto	Koreelah	..		..		P 1909	..	400						
206	Charlotte Plains Lease	1. Adgingbong*	28	3	146	0	1891	..	D1,910	..	116.5	1,096,000	86		
	Ditto (Cunnamulla)	2. Turnworth* (coal band)	27	59	146	8	1892	..	1,842	..	116.2	1,188,300	97		
207	Charlotte Plains Lease	1. Gorman Creek*	20	34	143	40	1894	..	1,220	1,003	..	..	..	40	limited
	Ditto (Richmond)	2. Deep Water*	20	28	143	38	1894	1,046	D 900	*b* ?	98	250,000			
	Ditto	3. Camoola Creek*	20	26	143	41	1894	..	2,012	*a* 620	106	..	..	45	limited
	Ditto	4. Yellow Wood*	20	30	143	39	1895	..	D 900	*b* 900	warm	300,000			
	Ditto	5. Valley*	20	28	143	46	1896	..	900	..	..	..	..	45	SP 150,000
	Ditto	6. Station*	20	26	143	51	1898	..	804	..	warm	..	..	140	W good
	Ditto	7. **Middle Valley**	20	21	143	52	1900	..	460	..	cold	..	..	132	SP 96,000
	Ditto (coal seam)	8. Back Creek*	20	22	143	56	1901	..	1,086	..	..	..	..	400	good
208	Charlton Lease	Fitzpatrick	27	54	147	17	P 1911	..	1,466	..	..	trickle			
209	Chatsworth Lease	1.	21	47	139	55	1894	..	3,266	..	..	..	..	100	
	Ditto	2. Pilgrim Creek (*abandoned*)	21	34	140	7	1895	..	1,375						
210	Childers District	Doolbi (*abandoned*)	..		..		..	..	590	..	..	..	..	..	very small
211	Claverton Lease	1. **Woolshed***	27	22	145	59	1891	L 754	1,753	no record	117	V 1,096,000			
	Ditto	2. **Clarke's Lake***	27	20	146	9	1892	L 768	1,777	,,	112	V 479,000	46 to 54		
	Ditto	3. **Alicia***	27	11	145	41	1892	L 763	1,819	,,	122	V 816,700	57 to 58		
	Ditto	4. N. Boundary*	27	10	145	52	1899	L 793	1,868	,,	122.2	V 1,408,500	84 to 93		
	Ditto Resumption	Yarramanbar, Whitney*	27	13	146	14	1909	L 846	1,955	,,	115.2	V 852,800	47 to 55		
	Ditto	Airlie, Leed's*	27	18	146	4	1909	L 785	1,899	,,	116	V 1,355,800	82 to 95		
	Ditto Lease	7. Barbara*	27	17	145	44	1910	L 765	1,717	*c* 1,717	117	V 816,300	33 to 52		
	Ditto Resumption	Rosevale G.F. 7v, Hill's*	27	4	145	41	1898-99	L 896	1,960	*b* 1,900	120.2	V 935,000	? 53		
212	Cleveland Town	Cleveland Pt. (*2 bores*) (*ab'd.*)	..		..		..	..	240						
213	Clifton Lease	C. H. J. Schmidt	27	48	146	55	1909	..	1,758	..	118	R 3,000,000			
	Ditto		27	41	147	0	1911	..	2,209	1,600	..	1,800,000			
214	Clonagh Run	1. Reid's*	19	59	140	47	1901	..	1,086	..	110	..	..	18	SP 25,000
	Ditto	2.													
	Ditto	3.	..		..		1909	..	1,373	..	..	20,000			
215	Cloncurry District	Mount Elliott Mines	21	32	140	32	1906	..	? 105	105	..	..	..	?	
216	Clutha Lease	Clutha	20	22	142	29	1899	..	1,103	..	..	R 2,000,000			

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
217	Clutha Resumption	1. Nonda Downs (Carter's)* ..	20° 40′	142° 32′	1899	..	1,340	..	180	R 3,000,000			
	Ditto	2. ditto G.F. 777 ..	20 39	142 19	1901	..	? 1,060	..	..	2,800,000			
	Ditto	Euraba (Crother's)	20 27	142 21	1899-00	..	1,300	..	..	2,050,000			
218	Cockatoo Station	1. Station	near	Taroom	..	..	142	..	..	..	..	38	7,500
	Ditto	2. Pine Creek	..	..	1910	..	300	280	..	..	..	200	good
219	Colaine Selection	..	..	..	1910	..	374	..	..	..	..	..	8,500
220	Comongin North	..	26 30	144 20	1911	..	? 3,000	..	..	1,250,000			
221	Compton Downs Lease ..	1. Station*	20 36	143 33	1894-96	..	D1,200	*b* ..	cold	..	..	?	
	Ditto	2. Yarraman	20 35	143 32	1894-96	..	D1,000	*b* ..	warm	R 500,000			
	Ditto	3. Gorman Creek	20 36	143 36	1894-02	..	D1,000	..	..	R 500,000			
	Ditto	4. Plains	20 39	143 31	1902	..	D1,020	..	warm	R 500,000			
	Ditto	5. Gorge	20 42	143 35	1897-98	..	611	..	90	R 100,000			
	Ditto Resumption ..	1. Rainscourt G.F. 193 ..	20 31	143 28	1898-99	..	996	..	warm	R 1,000,000			
	Ditto	2. Mayfield G.F. 192	..	..	1899-07	..	? 1,700	..	..	? 12,000			
222	Coomburra Lease	Coomburra	28 36	147 3	1892	L 727	2,036	..	122	V 928,340			
223	Coomrith and adjacent country	(13 *shallow bores*)	27 33	149 37	1909	(50 to 248)	..	..	..	..	..	(up to 30)	(20,000 and over)
224	Coongoola Lease	1. Inquin*	27 47	146 0	1891	L 664	1,614	1,400	114.7	V 213,400	26 to 52		
	Ditto	2. Kudnapper*	27 42	145 53	1892	L 682	1,807	1,400	107	V 292,800	33 to 100		
	Ditto	3. Balah*	27 44	146 15	1892	L 645	1,802	1,400	125	1,509,800	113 to 127		
	Ditto	4. Shaw's*	27 50	145 50	1905	L 672	1,750	no record	109.5	V 1,545,000	95 to 102		
	Ditto Resumption ..	Glenyarra G.F. 400*	27 53	145 59	1907-08	..	1,885	*c* ..	115.5	CV 1,272,600	77 to 86		
225	Coongoola E. District ..	**Boorte** (Goldsworthy)* ..	27 30	146 5	1897	L 721	130	no record	74.7	..	..	55	? 400
	Ditto	1. **Offham** (Palmer's) ..	27 31	145 56	1898-99	L 717	1,147	,,	97.5	V 169,400	8		
	Ditto	2. ditto *	27 32	145 52	1907	L 719	1,789	,,	117.2	CV 1,630,000	86 to 94		
	Ditto	Victo and Elvandale* ..	27 36	146 5	1895	L 701	1,741	1,600	114.2	V 1,018,600	85 to 93		
	Ditto	Longlands*	27 37	145 54	1899	L 701	1,892	*c* 1,882	113.5	CV 1,908,900	83 to 97		
	Ditto	Charlotte Vale (well)	27 39	146 8	bef. 1905 ?	..	24	no record	..	..	..	20.5	2,170

226	Coorabulka Lease	A (old)	23	47	139	55	'87 or '88	..	300	..	cold	small dribble			
	Ditto	1. Tent Hill, No. 2*	23	31	140	17	1901	..	822	660	..	1,000,000			
	Ditto	2. Tent Hill, No. 4*	23	39	140	19	1901-02	..	972	941	..	1,600,000			
	Ditto	3. Eaton Hill, No. 2*	23	45	140	20	1902	..	1,282	1,250	..	930,000			
	Ditto	4. Mama, No. 2*	23	52	140	22	1902-03	..	1,350	1,325	..	800,000			
	Ditto	5. Cania Downs*	24	6	140	22	1903	..	1,548	c 1,548	..	1,930,000			
	Ditto	6. Eu-No East*	23	52	139	54	1904	..	847	d 818	..	1,400,000			
	Ditto	7. Pallico	24	4	139	55	1905	..	1,092	1,050	..	1,250,000			
	Ditto	8. Mama, No 1	23	51	140	14	1907	..	? 1,046	1,046	..	R 2,000,000			
	Ditto	?	..		..		1909	..	1,873	..	..	R 2,000,000			
227	Coreena Leases*	1A. (*abandoned*)	..		..		1890	..	? 650						
	Ditto	1. Coreena*	23	17	145	19	end 1896	..	D2,490	1,900	124	..	..	6	P large
	Ditto	2. Whatton*	23	13	145	20	1890	..	904	..	100	800,000			
	Ditto	3. Coreena*	23	19	145	22	1891-99	..	D2,424	1,855	124	..	..	10	
	Ditto	4. Elton East*	23	22	145	35	1892	..	1,993	..	..	..	..	102	P 75,000
	Ditto	5. ditto *	23	25	145	32	1892	..	760	..	96	300,000			
	Ditto	6. Emu Hills*	23	16	145	33	1893	..	637	..	96	..	..	22	P
	Ditto	6A Gum Creek (*? abandoned*)	23	11	145	34	1893	..	200	..	96	..	..	16	P
	Ditto	7. Elton*	23	19	145	32	1897-98	..	809	c 661	..	..	..	4	P
	Ditto	8. Emu Hills East	23	15	145	35	1898	..	502	a 200	..	..	..	64	P
	Ditto	9. Highlands No. 1*	23	26	145	40	1899	..	557	a 250	..	..	..	240	limited
	Ditto	10. Elton*	23	22	145	31	1904	..	756	c 700	..	300,000			
	Ditto	11. Newark*	23	20	145	20	1904-05	..	2,106	1,085	..	240,000			
	Ditto	12. Aslockton*	..		..		1906	..	1,106	c 1,007	..	350,000			
	Ditto	13. Emu Hills*	..		..		1906	..	247	b 215	..	200,000			
	Ditto	14. Bellabad*	..		..		1906	..	935	d 935	..	815,000			
	Ditto	15. Emu Hills	..		..		1906	..	525	..	..	R 200,000			
	Ditto	16. Elton	..		..		1907	..	780	..	..	360,000			
	Ditto	17. Coreena	..		..		1907	..	577	..	..	1,500,000			
	Ditto	18. Emu Hills East	..		..		1907	..	540	..	..	500,000			
	Ditto	19. Coreena	..		..		1907	..	510	..	..	300,000			
	Ditto	20. Highlands, No. 3	..		..		1907								
	Ditto	21. Emu Hills	..		..		1907	..	200	..	..	..	..	22	P
228	Corrella	Selection	..		..		1909	..	? 300	..	..	..	..	..	SP 9,000
229	Corinda and Uanda Leases	1 Thom's*	22	8	145	17	1888-89	770	334	c 307	85	C 85,300	25½		
	Ditto	2. Five Corners*	22	11	145	18	1889	780	362	b 318	89	V 30,000	10½		
	Ditto	3. Cow Paddock*	22	2	145	20	1889	835	248	b 216	86	C 20,300	6½		
	Ditto	4. "P. R."*	21	46	145	26	1889	900	397	a 65	84	..	..	35	SP 60,000
	Ditto	5. Silverdale*	21	54	145	26	1889	835	280	c 231	85	29,780	over 5		
	Ditto	6. Desert*	21	58	145	28	1889	..	297	a 80	..	..	..	46	
	Ditto	7. Jericho*	22	5	145	20	1889	800	226	b 138	81	V 87,430	12		
	Ditto	8. Paradise*	22	13	145	15	1889	760	510	? a 405	92	V 90,000	18		
	Ditto	9. Bough Shed*	22	10	145	13	1890	790	518	b 436	93	104,000	28½		
	Ditto	10. Woolshed (Old)*	22	1	145	13	1890	780	526	b 413	92	C ? 117,000	20		
	Ditto	11. Perringunga* (Tin Hut)	21	40	145	9	1890	875	606	b 510	105	V 7,130	3		
	Ditto	12. Bullock Creek*	21	34	145	5	1890	940	658	b 616	93	..	..	35	SP 54,400
	Ditto	13. Haddon's*	22	4	145	15	1890-91	795	440	c 372	89	C 113,600	29		
	Ditto	14. Boundary	22	10	145	7	1891	790	753	? a 707	98	123,700	good		
	Ditto	15. Corinda Station	22	2	145	20	1891	840	367	a 244	87	C 22,240	3		
	Ditto	16. Sawpit*	22	2	145	24	1891-05	840	D 396	..	..	57,600			

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
229	Corinda and Uanda Leases	17. Sheepyards	22° 5′	145° 22′	1891	827	301	*a* 216	84	C 11,770	3½		
	Ditto	18. Jam Creek	22 4	145 20	1891	810	222	*a* 180	83	C 86,280	16		
	Ditto	19. Thunderbolt	22 8	145 19	1891	775	301	*a* 255	82	C 110,300	22		
	Ditto	20. Mutual	22 5	145 8	1891	805	642	*a* 572	98	V 123,700	27½		
	Ditto	21. Beach's	21 59	145 20	1891	825	310	*b* 243	87	V 22,990	7		
	Ditto	22. Undercliffe*	21 59	145 24	1891-05	820	D 300	*a* 113	84	VR 100,000			
	Ditto	23. Overflow*	21 56	145 20	1891	815	261	*b* 229	87	V 29,000	11		
	Ditto	24. Herbertshire	21 55	145 22	1891	852	214	*a* 162	82	C 25,000	14		
	Ditto	25. Round Mountain ..	21 55	145 25	1891	830	217	*a* 69	83	V 20,000	2		
	Ditto	26. Blind (*abandoned*) ..	21 51	145 25	1891	910	300	*a* 145	..	..	..	..	
	Ditto	27. Rainsby*	21 51	145 20	1891-92	850	342	*b* 230	86	48,550	8	36	
	Ditto	28. Upper Camp	21 52	145 26	1892	880	360	*a* 91	..	..	..	13	chain pump
	Ditto	29. Albion Vale* (*abandoned*)	22 21	145 43	1892	1,025	510	*b* 168	..	..	..	16	salt
	Ditto	30. Taylor's Creek*	21 37	145 10	1896-99	885	D 850	*b* 420	..	V 150,000	20		
	Ditto	31. Prairie Creek (*abandoned*)	21 40	145 1	1897-98	885	800	*a* 532	..	..	..	200	small
	Ditto	32. Woolshed (New)* ..	22 1	145 13	1899	780	858	*a* 413	..	770,000			
	Ditto	33. Five-mile Springs ..	..	..	1906	..	267	..	..	151,200	20		
230	Cork Lease	Cork	22 54	142 20	P1908-10	..	3,580	..	..	R 550,000			
231	Corona	1. (*abandoned*)..	23 10	143 25	1910	..	shallow	very salt					
	Ditto	2. ditto	..	..	1910	..	„	salt					
232	Cressbrook Estate ..	D. C. McConnel	..	..	bef. 1906	..	26	*a* 26	..	..	..	10	P 48,000
	Ditto	11 *other shallow bores*	..	..	bef. 1906	..	..	..	..	..	..	..	P good
233	Crow's Nest District ..	(*several shallow bores*).. ..	27 15	152 5	1908	..	?	..	..	..	..	?	P good
	Ditto	Bergen, Nitz's	..	..	1911	..	250	..	..	..	..	..	? W good
234	Culloden Lease	1. Govatt and Ore's	22 10	144 25	1897	..	2,480	..	135	500,000			
	Ditto	2. Mayfield	..	..	1907	..	1,810	..	..	? 2,000			
	Ditto Resumption ..	Burslem (Wedgewood's)* ..	22 1	144 25	1896-97	..	2,412	..	..	..	..	6	SP 80,000
235	Cunnamulla East District	Hariman Park (Beel's)* ..	28 5	145 48	1895	..	1,706	..	109	CV 1,305,700	82 to 94		
	Ditto	Horton Vale (Phillott's)* ..	27 56	145 47	1897	..	1,816	*j* 1,800	113	CV 1,033,900	84 to 96		
	Ditto	Nine-mile (Beel's)* ..	28 0	145 49	1902-03	..	1,986	1,800	111	V 1,239,800	87 to 99		
	Ditto	Moorabindah G.F. 98* ..	27 58	145 45	1906-07	..	1,800	..	112	CV 1,207,300	77 to 91		

236	Ditto	Corio G.F. 250	28	4	146	20	1898-99	..	1,796	1,600	112	VR 4,500,000	..		
237	Cunnamulla S.W. District	**Kahmoo G.F. 83***	28	6	145	30	1896	..	1,192	..	104	V 473,400	43 to 78		
	Ditto	Waihora G.F. 180*	28	14	145	16	1896-97	..	? 1,230	..	110	497,300	77 to ? 96		
	Ditto	Strathlea G.F. 142*	28	14	145	29	1903	..	1,502	..	116.5	CV 728,800	90 to 93		
	Ditto	Bowra Lease*	28	59	145	36	1908	..	1,593	..	118	CV 1,413,900	101 to 107		
	Ditto	Sedenen G.F. 204*	28	23	145	22	1907.08	..	1,561	..	105	V 65,640	8 to 10		
	Ditto	Ginnenbah G.F. 391*	28	27	145	28	1908-09	..	1,640	..	114	V 1,080,300	97 to 101		
238	Dagworth Lease	1. **Crescent Creek***	21	55	142	1	1892-93	L 764	3,335	*c* 3,100	196	94,400	?		
	Ditto	2. Pinnacle*	21	52	142	9	1898	L 738	3,400	*a* 2,700	192	400,000	? 43		
239	Dagworth Resumption	1. Fairview G.F. 201*	21	41	142	22	? 1900	..	3,579	..	high	800,000			
240	Dalby North District	Jimbour Lane*	27	3	151	13	1898	..	77	*a* 77	..	..	..	70	
	Ditto	Cattle Creek Road*	27	3	151	17	1898	..	80	*a* 80	..	..	..	70	
	Ditto	Sundown*	26	59	151	8	1898	..	186	*a* 186	..	..	..	105	good
	Ditto	Five-mile Dam*	27	4	151	9	bef. 1894	? 1,090	240	*a* 240	..	..	..	70	P good
	Ditto	Broadmount*	27	0	151	4	1898	..	not	stated					
	Ditto	Irvingdale (Mulholland's)*	..		..		1902	..	75	*a* 70	..	..	..	68	P ? 9,000
	Ditto	Jimbour Estate, Campbell's	..		..		1909	? 116	116	..	..	..	..	51	P 10,000
	Ditto	ditto Chamberlain's	..		..		1909	? 80	80	..	..	..	..	25	P 5,000
	Ditto	Squaretop, Bell Railway	..		..		1910	? 43	43	..	..	..	..	?	good
241	Dalby South District	St. Ruth*	27	41	151	17	1898	..	80	*a* 80	..	..	..	68	
	Ditto	Oakwood*	..		..		1898	..	64	*a* 64	..	..	..	56	
	Ditto	Killeeno*	..		..		1898	..	53	*a* 53	..	..	..	45	
	Ditto	E. O'Keefe's*	..		..		1902	..	106	*a* 78	..	..	..	75	P 9,020
	Ditto	J. D. Mulholland*	..		..		1902	..	98	*a* 88	..	..	..	86	9,600
	Ditto	L. Riethmüller*	..		..		1902	..	110	*b* 80	..	..	..	64	P 6,720
	Dalby Town	(*several shallow bores*)	..		..		1908	..	?	..	..	..	..	..	good
	Ditto	Church of England	..		..		1908	..	? 72	72	..	..	..	..	good
242	Dalgonally Lease	1A. Sedan (*abandoned*)*	..		..		1890	? 290	? 336	dry					
	Ditto	1. **Fullarton**	..		..		1890	305	108	no records	87	V 32,700	3 to 6		
	Ditto	2. **Gilliat***	..		..		1891	308	336	,,	98	..	..	nr. surf.	
	Ditto	3. **Twelve-mile***	20	15	141	35	1891	355	D 450	,,	88	V 70,000	..		
	Ditto	4. **Springs***	20	22	141	36	1891	355	? 300	,,	122	? 20,550	4½ to 19½		
	Ditto	5. Eastern Creek (new)	..		..		1901	..	917	..	..	270,000			
	Ditto	6. William's River*	..		..		1901	..	993	..	..	140,000			
	Ditto	7. The Plain	..		..		1902	..	1,204	..	..	450,000			
	Ditto	8. Kalara	..		..		..	..	970	..	..	850,000			
	Ditto	9. Alva	..		..		..	..	1,080	..	..	500,000			
	Ditto	10. Lorne West	..		..		..	..	557	..	..	700,000			
	Ditto	..	..		..		1911	..	800	..	..	1,500,000			
243	Dalmally Freehold	1. Coinda	26	47	148	37	1906	..	2,186	..	..	? 5,000			
	Ditto	2. Dalmally	..		..		P 1907	..	2,000						

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
244	Dalzell, W. K., and Co., of	1. Dalgi (old)*	23° 26′	145° 16′	1891	925	1,169	*a* ? 1,150	? 103	..	..	? 18	W large
	Ditto .. [Barcaldine	2. Porcupine* ..	23 33	145 34	1896	..	430	*b* 396	95	..	..	15	P large
	Ditto	3. Maxwell's* ..	23 30	145 37	1897	..	600	? 162	? 82	..	..	? 26	SPW large
	Ditto	4. Shakespeare's*	23 27	145 27	1892	..	1,040	? 1,000	96	? 297,800	11 to 13		
	Ditto	5. Dalgi (new)*	23 26	145 18	1898-99	..	1,215	*b* 1,040	104	..	..	15	
	Back Creek	1. G.F. ? 7v ..	..	..	1900	..	247	..	..	..	..	200	P
	Ditto	2. G.F. ? 7v ..	..	..	1905	..	315	..	..	..	..	130	P
245	Darr River Downs Lease	1. Nine-mile ..	22 54	144 5	1888-99	740	D3,600	*b* ? ..	..	70,000			
	Ditto (Coal seam in one of these bores.)	2. Fairlie*	22 43	143 57	1889-01	755	D3,890	..	..	220,000			
	Ditto	3. Muttaburra Road ..	22 37	143 51	1890-91	845	3,650	*c* 3,210	170	285,580	24		
	Ditto	4. **Overnewton**	22 49	143 49	1892-94	802	4,006	*b* 3,320	175	148,640	34		
	Ditto	5. Twenty-mile	22 38	143 46	1894	745	?	..	..	..	..	..	Wh 5,000
	Ditto	6. Breedon	23 0	143 56	1893	750	900	900	warm	..	..	..	SP 16,000
	Ditto	..	..	..	P 1911	..	1,257						
246	Darr Water Farms	Haynes Bros.*	..	..	1909	..	370	370	..	..	..	?	P 7,000
247	Davenport Lease ..	1. Station	24 10	141 10	1902-03	..	? 1,600	..	..	R 3,500,000			
	Ditto	2. Ingledoun ..	..	..	1908-09	..	1,780	..	..	R 2,000,000			
248	Delta Lease	Delta* ..	23 38	145 31	1893	..	1,340	*b* 1,340	108	306,800	7 to 8		
249	Devoncourt Lease*	Cattle Creek	21 11	140 14	1910	..	71	..	..	..	..	35	P large
	Ditto	Burke River	21 23	139 58	1910	..	50	..	..	..	..	47	SP large
	Ditto	Near Homestead	..	..	1911	..	270	..	..	..	..	..	20,000
	Ditto	..	..	..	1910	..	35	..	..	..	..	..	22,000
	Ditto	McMaster Bros.	..	..	1910	..	36	..	..	..	..	..	large
250	Dillalah Lease	1. **Hythe***	26 38	145 55	1891-94	L 896	D1,947	*a* 1,300	122 5	V 1,230,000	? to 68.5		
	Ditto	2. **Lodden**	26 35	145 39	1892-93	.	2,700	2,600	132	1,207,330			
	Ditto	3. **Hythe***	26 37	145 59	1893-94	L 1,001	1,990	1,850	120.9	V 807,000	40 to 42 ?		
251	Donors Hill Lease	Station* (*coal streaks*)	18 43	140 38	1902-03	..	2,256	..	..	8,000			
252	Duaringa, C. Railway*	1. { Sunk by Queensland	23 43	149 41	1901-02	..	1,222	..	..	no water			
	Ditto	2. { Anthracite Coal Co.	..	..	1902	..	1,300	..	..	no water			

253	Durham Downs and Tonko	1. Wareena Creek*	27	8	142	11	? 1892	..	2,968	*a*	1,900	140		9,600	60		
	Ditto .. [Leases	2. Cook's Well	26	44	141	31	bef. 1896	..	250		..	..		..	..	50	SP good
254	Dynevor Downs Lease	1. Wirrarah* (*abandoned*)	28	12	°144	26	1892	..	30								
	Ditto	2. Ooliman*	28	8	144	30	1892	..	211	*a*	140	? 80	?	28,000	13		
	Ditto	3. Cainawarra* (*abandoned*)	28	14	144	23	1893	..	158								
	Ditto	4. Cainawarra*	28	14	144	23	1893	..	156	*a*	150	? 80	?	23,000	6½		
	Ditto	5. Wirrarah* (*abandoned*)	28	12	144	26	1893	..	40								
255	Eddington, Julia Ck., and	A. Julia Creek	20	42	141	49	1891	400	300		no	cool		152	nil	at	20,000
	Ditto [Leilavale Leases	B. ditto	20	42	141	49	1891		30		records	cool		..	..	surf.	10,000
	Ditto	C. Pidgeon Creek	20	26	141	44	1891	415	140		..	82		1,487	2		
	Ditto	1. **Woolshed**	20	38	141	35	1898	..	1,163	*a*	1,060	125		677,000			
	Ditto	2. **Alma**	20	46	141	30	1898	..	1,099	*a*	1,060	128		330,200			
	Ditto	3. **Camarooka**	20	47	141	45	1898	..	1,279	*a*	1,060	127		454,000			
	Ditto	4. **Horse Creek**	20	37	141	50	1898	..	1,060	*a*	978	110		748,100			
	Ditto	5. Holy Joe	20	52	141	18	1898-99	..	1,106	*a*	850	110		380,000			
	Ditto	6. Box Creek	20	47	141	16	1899	..	1,155	*a*	800	108		182,800			
	Ditto	7. **Gidya Creek**	20	44	141	24	1899	..	964	*a*	870	120		629,200			
	Ditto	8. Peru	20	45	141	55	1899	..	1,020	*a*	760	120		729,400			
	Ditto	9. Clachlond	20	42	141	38	1900	..	1,192	*a*	1,043	127		454,500			
	Ditto	10. Sannox	20	41	141	29	1900-01	..	986	*a*	945	120		230,000			
	Ditto	11. Lilavale	..		..		1905	..	1,054	*a*	889	120		330,200			
	Ditto	12. Devon	20	35	141	33	?	..	1,097	*a*	978	117		99,400			
	Ditto Resumption	Kamarooka G.F. 990*	20	52	141	35	1900	..	1,388		..	128		125,000			
	Ditto	Pownes Selection 6c	21	7	141	28	1905	..	979	*a*	900	..		200,000			
	Ditto	Hueloa G.F. 845	20	57	141	32	1904	..	1,380		..	133		400,000			
	Julia Creek Resumption	G.F. 981, Rundle's	20	46	142	0	P 1911	..	1,100	*b*	877	..		10,000			
256	Elderslie Lease	1. Farewell*	22	0	142	12	1896-98	..	3,500		3,380	very hot		100,000			
	Ditto	2. Cathedral*	22	8	142	18	1900-02	..	4,523	?	4,500	202		1,000,000			
	Ditto	3. Cape Goleburra*	22	31	142	35	1900-01	L 730	3,680		..	very hot		900,000			
	Ditto	(3 *shallow test bores*)*	..		..		1907										
257	Elmina Lease	1. (*See Boatman, No.* 4)															
	Ditto	2. Elmina*	27	17	146	30	1898-99	..	809	*a*	809	? 110	V	750,000			
	Ditto	3. Elmina*	27	17	146	30	1899	..	1,431	*b*	1,430	? 115	V	2,700,000			
	Ditto	4. Shed	27	25	146	34	1906	..	1,511		..	? 118	V	2,800,000			
	Ditto	A. Shallow Bore	27	21	146	36	?	..	? 50		..	..		..	..	?	
	Ditto	B. ditto	27	23	146	38	?	..	? 50		..	..		..	..	?	
258	Elverston Lease	**Elverston**	27	14	146	22	1897-00	..	1,800		..	? 106	R	2,500,000			
259	Erne Resumption	1. Allan G.F. 14v	24	21	145	59	1908-09	L 1,304	1,200	*c*	1,000	..		..	..	16	P 30,000
	Ditto Lease	2.	24	24	145	59	1910-11	L 1,376	700	*b*	560	..		..	..	90	P fair
	Ditto Resumption	Allandale, M. Ryan's	24	21	145	55	1909-10	L 1,252	996	*b*	980	..		2,100			
260	Esk District	Mount Esk	..		..		bef. 1895 ?	..	90		..	..		..	..	..	P good
261	Eton Vale and Harrow	(19 *bores* 14′ *to* 100′)	..		..		bef. 1906	..	?		..	..		..	..	..	P good
	Ditto [Homesteads	(3 *bores over* 100′)	..		..		bef. 1906	..	?		..	..		..	..	..	P good
	Ditto	(1 *trial bore*)*	..		..		bef. 1906	..	58	*a*	40	..		..	..	?	SP 24,000

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
262	Eulolo Lease	1. Coomarra	21° 25′	141° 30′	1892	630	1,426	*a* 1,300	138	540,000	46 to 53		
	Ditto	2. **Woolscour***	21 15	141 33	1892	550	1,220	*b* 1,056	135	388,600	49 to 73½		
	Ditto	3. **Wild Duck**	21 23	141 40	1895	615	1,874	*a* 1,280	145½	431,000	64 to 84½		
	Ditto	4. Hickson's Creek	21 18	141 24	1897	..	1,079	*a* 1,057	123	250,000			
	Ditto	5. Mistake Creek	..	..	1899	..	1,217	*a* 1,010	..	230,000			
	Ditto	6. Woolscour, No. 2.. ..	..	..	1903	..	1,182	1,092	128	250,000			
	Ditto	7. Wild Duck, No. 2* ..	..	..	1905	..	1,592	*c* 1,404	144	870,000			
	Ditto	8.	..	..	1907	..	1,500	..	..	450,000			
	Ditto	9.	..	..	1907-08	..	1,288	..	..	525,000			
	Ditto	10. Near Woolscour	..	..	1908	..	1,234	..	..	237,000			
	Ditto	Moonamarra	21 11	141 17	1911	..	785	*a* 778	..	150,000			
263	Eurella Station ..	D. Fletcher	..	..	P 1909	..	2.124	..	..	..	..	150	
	Ditto Resumption ..	Freehold Por. 52	26 40	148 13	1910	..	1,864	..	..	..	..	?	
264	Evesham Lease	1. Deep Bore	22 59	143 38	1908-10	..	4,150	*a* 260	..	over 250,000			
	Ditto	2. Evesham, No. 3 West ..	23 3	143 40	P 1911	..	2,342	*a* 450	..	..	..	160	brackish
	Ditto	3. Shallow Bore	..	..	1908	..	?	..	..	..	..	?	P 7,000
	Ditto	4. ditto	..	..	1908	..	368	368	..	..	..	?	P 10,000
	Ditto	5. ditto	..	..	1908	..	?	..	..	..	..	?	? P
	Ditto	6. ditto	..	..	1908-09	..	? 200	200	..	..	..	?	P 2,000
	Ditto	7. ditto	..	..	1909	..	? 130	..	..	..	..	?	?
	Ditto	8. ditto (*abandoned*) ..	..	..	1909	..	330	dry					
	Ditto	9. ditto	..	..	aft. 1909	..	? 400						
	Ditto	10. ditto											
	Ditto	11. ditto											
	Ditto	12. ditto	..	..	1909	..	340	..	..	..	..	..	small
	Ditto Resumption ..	Greysteel, Lucas, junr. ..	23 18	143 42	1907	..	? 305	..	..	..	..	?	SP 24,000
265	Evora Lease	1. Station	24 5	145 31	1890-93	L 1,041	D2,398	*b* 2,280	127	C 322,000	25 to 29		
	Ditto	2. Yalleroi	23 59	145 48	1900-01	L 1,061	1,204	*a* ..	..	200,000			
266	Evora Resumption ..	1. Castleroi G.F. 5*	24 6	145 47	1900	L 1,180	? 580	..	..	..	..	at surf.	W good
	Ditto	2. ditto Dawes*	24 9	145 46	..	L 1,108	810	800	..	33,000			
	Ditto	G.F. 717, Tilbury's*	24 7	145 41	1902-03	L 1,105	1,258	*b* 970	..	? 6,200			
	Ditto	Westhill, McKenzie*	20 10	145 41	1908	L 1,158	2,994	1,100	..	4,000			

267	Fairlight Resumption	Spring Valley (Nicholson's) ..	20	31	144	3	1899	..	460	*a* 300	..	..	..	at surf.	P 57,600
	Ditto	Wilson's	20	36	144	1	1900	..	1,050	*b* 1,050	..	200,000			
268	Fernlee Lease	Queen's Birthday*	28	4	147	5	1893	..	2,102	1,800	128	2,400,980	tidal		
269	Fort Constantine Lease ..	1. **Alice***	20	34	140	54	1893	465	665	*c* 620	103	111,620	? 26		
	Ditto	2. Williams (May Day)* ..	20	43	140	59	1893-94	475	940	*c* 800	106	157,400	35½ to 81		
	Ditto	3A. **Elder***	20	51	140	51	1894	580	240	*a* 155	89	26,400			
	Ditto	3B. do.*	20	51	140	51			165	..	89	7,380	3½ to 7		
	Ditto	4 and 5. Elder* (*abandoned*)	20	51	140	51			212						
	Ditto	6. Dam (*abandoned*) ..	20	35	140	47	1894	? 465	185	65	..	..	..	15	abundant
	Ditto	7. Gypsey's Ck. (*abandoned*)	20	22	140	50	1895	440	300	80	..	..	..	15 to 20	
	Ditto	8. **Kennedy's Yard*** ..	20	33	140	59	1895	395	883	*b* 850	110	71,650	6½ to 35½		
	Ditto	9. Boundary*	20	16	140	53	1895-96	400	1,020	*b* 895	hot	16,320			
	Ditto	10. Canal Creek	20	38	140	54	1900-01	..	642	*b*					
	Ditto	11. Gypsey Plains	20	18	140	50	..	..	300	..	..	..	..	27	P
	Ditto	12. Williams, No. 2	20	37	140	58	..	..	804	..	..	103,600			
	Ditto	13. Eliza	20	28	140	56	..	..	1,029	..	..	100,000			
	Ditto Resumption ..	Wright, G.F. 1	20	47	140	28	bef. 1910	..	? 600	..	..	good flow			
270	Foyle View Lease ..	Hoolah, Lillyman's	27	7	148	16	1911	..	2,520	2,520	..	340,000			
271	Glendower and Hughenden [Lease	1. Blantyre*	20	42	144	45	1900	..	675	..	..	..	..	207	
	Ditto	2. Prairie Creek	20	46	144	36	1901	..	1,010	*a* 155	..	..	..	80	P 64,800
	Ditto	3. Emu Creek	20	41	144	26	1901	..	455	..	..	..	..	? 300	P brackish
	Ditto	Mountain Paddock	..		..		1908	..	? 870	870	..	..	..	250	P good
	Ditto	..	..		..		P 1909	..	?						
272	Glendower Resumption ..	Penrice G.F. 899	..		..		? 1900	..	499	..	..	..	..	180	P 1,600
	Ditto	ditto	20	52	144	44	1900	..	500	..	..	..	..	160	P 10,000
	Ditto	Ferguson's G.F. 878	20	48	144	41	1900-01	..	850	*a* 570	..	..	..	? 370	SP 38,400
	Ditto	Chisholm's G.F.	20	49	144	36	? 1900-01	..	? 500	..	..	..	..	?	SP 5,000
	Ditto	Laural Vale (G.F. ? 820) ..	..		..		1901	..	780	..	..	..	..	300	P 2,500
	Ditto	Warrice Railway Siding (*ab'd.*)	..		..		1906	..	400						
	Ditto	Woodbine (Savage)	..		..		1900	..	480	..	..	..	..	80	P 1,600
273	Glenroy	W. Davis's		..		..	1910	..	495	..	..	..	..	..	20,000
274	Goondiwindi District ..	North Callandoon	28	28	150	14	1910-11	..	3,200	..	112	2,000,000			
	Ditto	Binigi Blocks (*sev'l shal. bores*)	..		..		..	(tot	al ? 300)						
	Ditto	Smith Blocks	..		..		1910	..	? 100						
	Ditto	Yellarbon	..		..		1909	..	? 247	247					
275	Glenormiston Lease ..	1. Glenormiston	23	0	138	44	1895-96	..	1,990	*b* 1,360	..	..	..	4	good
	Ditto	2.	23	10	138		P1909-10	..	? 700						
	Ditto	3.	23	10	138	47	1910	..	?	..	..	..	..	..	P 43,000
	Ditto	(*several successful wells*) ..	..		..		1910								
276	Gordon Downs Lease ..	(3 *shallow bores less than* 200 *ft. each*)	23	9	148	11	1909	..	..	? 180					
277	Gowrie Lease	Station	26	10	146	12	1908	..	1,600	1,600	..	R 750,000			
	Ditto Resumption ..	Millie Station, D. McNiel ..	..		..		1909	..	1,732	..	..	R 750,000	..	..	..

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION. Latitude South.	Longitude East.	When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN. Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	SUB-ARTESIAN. Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
278	Granada Lease	1. Jackey's Creek (*aband'ned*)*	20° 3′	140° 27′	1897	..	660	510	..	..	..	20	salty
	Ditto	2. Island (*abandoned*)* ..	19 54	140 31	1897-99	..	1,350	1,100	..	..	..	41	
	Ditto	?	..	..	1910	..	? 400	400	..	..	..	360	supply
	Ditto	3. (*abandoned*)..	..	..	1911	..	576	80	..	..	..	..	1,800
279	Grassmere Station ..	1.	27 30	147 20									
	Ditto	2.	..	..	1910	..	?	..	..	500,000			
280	Greendale Resumption ..	Jillett Bros.*	24 52	146 6	1906-09	L 1,375	4,011	3,420	130	90,000	..	? 3	
281	Green Hill Resumption ..	Luthrie's Selection	22 40	144 5	1909	..	? 285	285	..	..	..	?	good
	Ditto	,, ,, ...	..	..	..	..	300	..	..	..	..	..	good
282	Greenmount Station ..	(*three bores*)	27 47	152 ..	bef. 1905	..	? 330	..	..	..	..	..	P good
	Ditto	(*other bores*)	..	..	,, 1905	..	?	..	..	..	..	..	P good
	Greenmount Town ..	Cheese Factory	..	..	1907	..	35	..	..	..	..	..	P large
283	Gregory Downs Lease ..	Lawn Hills (*a well*)	18 40	138 40	1901-02	..	72	*a* 72	..	..	..	?	P 9,600
284	Hamilton Downs Lease ..	1. Clio	21 32	142 17	1895	..	3,301	2,700	160	R 1,400,000			
	Ditto	2. **Campsie***	21 24	142 17	1898-00	..	3,457	*c* 2,430	168	940,000			
	Ditto Resumption ..	Belford G.F. 581*	21 16	142 22	1898	..	2,200	*a* 1,650	..	800,000			
285	Hamlet Downs	A, B, C (*trials abandoned*)											
	Ditto	1. Geera (Hannay's)* ..	23 33	145 30	1898	..	1,060	*b* 1,010	102½	V 438,200	12		
	Ditto	2.	..	..	1903	..	1,170	..	..	350,000			
	Ditto	3.	..	..	1903	..	1,050	560	..	450,000			
	Ditto	4.	..	..	1903	..	1,030	..	..	350,000			
286	Hampden Mines	Florence Creek (*shaft*) ..	21 11	140 23	1910	..	50	..	..	..	..	30	SP large
287	Harrow Est., nr. Umbiram	1.	..	..	bef. 1906	..	50	..	..	..	..	..	P 10,400
	Ditto .. [Rly. Stn.	2.	..	..	,, 1906	..	50	..	..	..	..	..	P 10,400
	Ditto	3.	..	..	,, 1906	..	80	..	..	..	..	..	P large
	Ditto	4.	..	..	,, 1906	..	36	..	..	..	..	..	SP 24,000

288	Helidon District*	1. **Helidon Spa**	27	42	152	6	bef. 1880	..	60	a 60	60	V 3,000	over 4		
	Ditto	1A. ditto	27	42	152	6	1897	..	70	a 70	..	flow	over 4		
	Ditto	2. Puzzling Gully	27	42	152	4	? 1878	..	116	a 116	..	..	..	59	
	Ditto	3. (*abandoned*)	27	43	152	5	1896		? 150	a 144					
	Ditto	3A. Campbell's Spa (*ab'd*)	27	43	152	5	1896	..	144	a 144	cool	trickle	over 3 ?		
	Ditto	Hamlyn's Well	27	42	152	7	1896	..	201	a 200	..	..	..	55	W
	Ditto	ditto (*bore*)	..		..		..	..	250	..	..	..	..	40	P 3,000
	Ditto	Gardner Bros.	..		..		..	..	156	..	..	V 1,000			
	Ditto	Grotty, Thos.	..		..		..	..	65	..	..	3,000			
289	Herbertvale Lease	2.*	18	55	138	3	1904	..	335	..	..	..	..	?	SP good
	Ditto	3.	..		..		1910	..	375	..	..	..	..	..	P large
	Ditto	4.*	..		..		1911	..	395	..	..	..	..	..	P large
290	Homeboin Lease	Homeboin	27	23	147	39	1901-02	..	2,558	..	132	V 1,000,000			
	Ditto		..		..		1911	..	2,322	..	..	R 3,000,000			
	Abbieglassie	Loughman Bros.	27	15	147	36	P 1909	..	?	..	..	..			
291	Homebush			near	Blackall		P 1911	..	2,301	1,880	..	..	..	at surf.	
292	Home Creek Lease	1. Mayfair	24	2	145	22	1888-94	905	D2,617	b 2,500	137½	394,400	59½ to 66½		
	Ditto	2. Rocky	23	56	145	24	1894	L 992	2,363	b 2,200	133½	353,100	28		
	Ditto	3. Lagoon Creek	24	8	145	18	1898	L 1,006	? 2,300	..	..	? 100,000			
293	Hughenden District	Galah Creek (McEwen's)	20	42	144	17	1896-97	1,075	? 600	a 200	..	..	..	59	
	Ditto	Skeleton Creek (Mc. & S.) (*ab'd*)	20	52	144	31	1886	..	? 400	dry					
	Ditto	1. **Coolibah (Suter's)***	20	48	144	1	1898	..	1,250	c 980	..	..	..	? 65	W
	Ditto	2. Coolibah (T. Penny)*	20	45	144	11	1905	..	1,359	c 1,102	..	370,000	..		
	Ditto	Farnon Downs (Flynn's)*	20	45	143	56	1898	..	550	..	..	..	..	3	P 2,500
	Ditto	Renfrew, J. Smith	20	54	144	5	1906	..	1,292	b 962	..	..	..	7	W 144,000
	Ditto	Ballindalloch*	..		..		1910	..	640	..	..	..	..	132	large
294	Iffley Lease	1.	18	50	141	20	1903	..	? 1,200	1,200	..	?			
	Ditto	2.	..		..		1904	..	not	stated					
295	Ilfracombe District	Newstead G.F. 7v*	23	26	144	39	1895	820	2,522	c 2,310	136½	348,000	28 to 40		
	Ditto	1. Irvingdale G.F. 2v*	23	28	144	44	1897-98	890	D2,700	? 2,090	..	..	..	6	P large
	Ditto	2. Griffdale G.F. 6v	23	32	144	41	1900	..	2,600	..	? 140	R 520,000			
296	Ingledoun Lease		24	0	140	30	1905	..	? 1,000	..	..	R 2,000,000			
297	Inverleigh Lease	1. **Poingdestre***	18	6	140	25	1907	..	2,580	e 2,375	..	850,000			
	Ditto	2. "I." Creek	18	15	140	34	1908	..	2,330	2,204	..	500,000			
	Ditto	3. Lagoon Creek	17	52	139	58	1909	..	? 1,900						
298	Isis Downs Lease	Driest area	24	20	144	37	P1909-11	..	2,663	1,100	..	..	..	10	
299	Isisford	Allot. 6, sec. 1	24	16	144	26	1907	..	68	..	..	..	..	53	W 5,000
300	Isisford District	1. Wakefield G.F. ?, Coxon's	24	8	144	14	1909	..	524	..	..	..	..	100	P good
	Ditto	2. ditto ”	..		..		1909	..	440	..	..	..	..	140	P good
	Ditto	? ditto ”	..		..		1910	..	580	..	..	..	..	..	good

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	PGSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
301	Jericho District	Lampton Meadow G.F. 507 ..	23° 30′	146° 23′	1905	..	250	..	..	..	..	100	W 2,000
	Ditto	Rosedale Lease	23 10	146 4	1906	..	? 470	470	..	..	..	..	P
302	**Jondaryan Lease**	(*five bores*)*	..	..	bef. 1895	..	abt. 515	no record	..	..	..	..	P good
303	Katandra and Stamford-	1. Katandra*	21 27	143 48	1892-6	..	3,980	..	..	..	..	16	P 25,000
	Ditto .. [ham Leases	2. Stamfordham*	21 21	143 53	1896	..	3,723	..	..	50,000			
	Ditto	3. ditto*	21 12	143 38	1897	..	2,600	..	..	..	..	10	P large
	Ditto	4. Katandra*	21 40	143 49	1907	..	? 3,510						
	Stamfordham Resump.	Por. 5, C. Armytage	21 14	144 10	P 1911	..	1,815						
	Katandra Resumption	F. Fairburn's Por. 3	21 49	143 53	1900-01	..	? 2,700	*a* 2,300	..	..	..	100	
304	Kensington Downs ..	1. Kensington..	22 26	144 5	? 1897-98	..	3,650	..	..	..	..	30	
	Ditto	2. Cameron and Co.	22 30	144 4	P 1911	..	830						
	Ditto	Shallow	..	..	1910	..	? 350						
305	**Kilcummin Lease**	**Avon Downs** * (*abandoned*) ..	22 2	147 21	1888	..	1,822	..	..	..	..		
306	Kynuna Lease	1. Gilliat*	21 37	141 33	1895-96	L 866	1,630	*a* 1,420	180	..	..	? 155	SP 200,000
	Ditto	2. **Bellkate***	21 38	141 37	1896	L 768	1,708	*a* 1,390	155.5	..	..	48	SP 200,000
	Ditto	3. Glen Urquhart*	21 45	141 44	1896	L 774	2,187	..	155	..	..	54	W 200,000
	Ditto	4. Glen George*	21 42	141 59	1896-97	L 768	2,975	2,378	190	..	..	33	W 186,000
	Ditto (? coal seam) ..	5. Tumulca Creek*	21 43	141 51	1897-98	L 778	2,680	..	175	..	..	54	W 198,000
	Ditto	6. Jackton*	21 27	141 49	1898-99	..	1,990	*b* 1,700	184	R 500,000	? 61		
	Ditto	7. Shipley*	21 43	142 2	1908	L 744	3,226	2,700	163	..	..	16	W large
	Ditto Resumption* ..	1. Crendon G.F. 199	21 33	142 7	1899-00	L	2,534	..	190	500,000	? 60	..	..
	Ditto ,, * ..	2. Crendon G.F. 270	21 32	142 11	1906-07	L	3,028	*c* 2,510	..	..	..	15	W large
307	Kynuna District	1. Glenbervie G.F. 418 ..	21 17	141 50	1899	..	1,690	*b* 1,680	106	R 1,200,000			
	Ditto	2. Glenbervie*	..	..	1906	..	1,669	..	..	300,000			
	Ditto	Poimena G.F. 533*	21 15	141 55	1901	..	2,156	..	..	1,200,000			
308	Kynuna District	Waniola G.F. 529*	21 19	142 5	1899	..	2,156	2,060	187	1,000,000	69		
	Ditto	Rosemead G.F. 813*	21 16	142 3	1900	..	2,473	*b* 2,314	..	1,000,000	70		
	Ditto	Rosevale (Maggoffin's) ..	21 10	142 0	1907	..	1,846	..	..	1,700,000			
309	**Lake Dunne Lease** ..	**Lake Dunne***	22 40	145 37	1897	..	30	30	..	..	..	1	

310	Lake Nash	Muddy Creek*	20	54	138	4	1903	..	196	..	..	..	..	?	SP 60,000
311	Lammermoor and Oakley	1. (*abandoned*)*	21	7	144	42	1888-89	} 1,275	{ 720	dry					
	Ditto .. [Leases	2. Roy's Camp*	21	7	144	42	1890		820	*a* 714	96	..	..	? 62	SP 70,000
	Ditto	3. (*abandoned*)*	21	1	144	50	1890		624	624					
	Ditto	4. Warreah*	20	55	144	48	1891	? 1,345	1,170	*b* 600	..	..	..	? 200	SP 50,000
	Ditto	5. Montgomerie*	21	1	144	50	1895	1,275	920	*b* 620	97	..	..	?	SP 70,000
	Ditto	Pandorah	21	15	144	44	1900	..	1,050	..	98	..	..	20	SP 60,000
	Oakley Resumption ..	G.F. 882, Allen's	21	12	144	50	1910	..	?	..	..	..	..	?	?
	Ditto	G.F. 1206, „	21	7	144	50	1910	..	550	*b* 550	..	..	..	15	P good
312	Landsborough Downs ..	1. Theresa No. 2*	21	28	144	24	1893	..	2,063	..	113	..	..	27	W 15,000
	Ditto	2. „ No. 1	..		..		1899	..	1,920	*a* 1,500	..	..	..	70	P 25,000
	Ditto	3. „ No. 1*	..		..		1907	..	2,066	*k*	..	700,000			
313	Lansdowne Lease	1. Toolmaree*	25	14	146	16	1888-89	1,390	2,540	..	112	..	..	1–	W 60,000
	Ditto	2. Narambla	25	4	146	11	1889-92	1,350	3,005	*b* 2,900	127	88,000	7 to 10		
	Ditto	3. Downfall	25	4	146	18	1893-96	1,445	3,529	*e* 3,515	131	273,000	9 to 10½		
	Ditto	4.	25	22	146	9	1910	..	2,808	..	..	120,000			
314	Lerida	1. St. David	21	52	143	56	1897-98	..	? 3,511	*b* 3,460	..	250,000			
	Ditto	2. Glenullen	22	9	144	1	1898-00	..	3,500	*b* 3,400	..	300,000			
315	Listowel and Langlo Dns. Lease	Cobbold and O'Brien ..	25	32	145	30	P 1911	..	653						
316	Llanrheidol Lease ..	1. **Woolscour***	22	14	141	34	1888-92	..	2,241	*a* 2,140	155	V 614,930	41	..	..
	Ditto	2. Acacia	22	8	141	22	1896-97	..	3,085	1,700	? 145	..	..	106	SP 72,000
	Ditto	3. Derrie No. 1*	22	12	141	20	1907	..	1,709	*c* 1,709	120	240,000			
	Ditto	4.	..		..		1910	..	1,841	..	..	400,440			
	Ditto	5.	22	6	141	29	1911	..	1,803	..	..	54,000			
	Ditto	6.	22	9	141	29	P 1911	..	1,027		..	..	..	100	
317	Logie Plains	1. Haystack Plains	26	35	150	56	1905	..	124	..	..	..	..	?	P 8,160
	Ditto	2. Tuckerang	26	35	151	0	1905	..	105	..	..	..	..	?	P 6,720
318	Longreach Environs ..	Whitehill (White's)	..		..		1907	..	? 60	60	..	..	..	?	P
	Ditto	ditto	..		..		1911	..	350	..	..	..	..	..	20,000
	Ditto	ditto	..		..		1911	..	400	..	..	..	..	..	good
	Ditto	Cleeve (Telford's)	23	26	144	24	1906	..	154	*a* 140	..	..	..	..	P ? 75
	Ditto	ditto (*abandoned*)	..		..		1909	..	279						
	Ditto	ditto	..		..		1909	..	? 300	..	..	..	..	?	P 10,000
	Ditto	1 Rosedale	..		..		..	..	?						
	Ditto	2. ditto* (coal seam) ..	..		..		1909	..	300	..	..	..	..	..	P good
	Ditto	3. ditto	..		..		1909	..	405	..	..	..	..	..	small
	Ditto	4. ditto	..		..		1909	..	?	..	..	..	..	..	good
	Ditto	**Dahra G.F.**	..		..		1909	..	405	..	..	..	..	..	P 4,000
	Ditto	ditto	..		..		1911	..	508	..	..	..	..	..	good
319	Lucknow Lease	1. **Lucknow No. 2**	22	43	141	3	1895	? 590	? 1,188	*b* 1,100	121	? 525,110	17½		
	Ditto	2. ditto	23	19	140	45	1899-00	? 605	? 1,480	*a* 1,445	..	250,000			
	Ditto	3. Locharoch No. 4	22	58	140	51	P 1908	..	1,250	deepening	..	250,000			
	Ditto	4.	..		..		1908	..	1,300	1,300	..	good flow			
	Ditto	5.	..		..		1909	..	? 1,500	1,500	..	R 1,800,000			
	Ditto	6.	..		..		1910	..	1,640	..	..	R 1,000,000			

References to letters before the figures and after names are at the beginning of Table. *Notes on Bores* at end of Table of Water Analyses.

TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
319	Lucknow Lease	7.	..	..	1910	..	1,800	..	..	1,200,000			
	Ditto	8.	22° 54′	141° 10′	P 1911	..	1,290						
320	Mackay	Gasworks*	21 10	149 15	? 1892	? 14	32	..	..	..	..	?	300,000
	Ditto	Farleigh S. Mill*	..	..	1906	..	58	*a* 58	..	..	..	about 23	P large
321	Malula*	(2 coal seams)	locality	not known	1909	..	? 260	..	..	..	..	?	good
322	Malvern Hills Lease	Gowan* ¶	24 32	144 54	1890-94	? 1,020	3,942	*e* 3,500	..	..	..	58	
323	Maneroo	1. Dalgety and Co.	23 22	143 53									
	Ditto	2. ditto											
	Ditto	3. ditto											
	Ditto	4. ditto											
	Ditto	5. ditto	..	..	1910	..	460	..	..	..	..	..	P 20,000
	Ditto	6. ditto	..	..	1909	..	400	..	..	..	..	..	P 800
324	Manfred Downs Lease	1. **Windmill***	20 14	141 44	1888	438	165	several	87	500	2	..	W
	Ditto	2.	20 19	141 45	1899	..	680	..	..	small flow			
	Ditto	2B. **The Springs***	20 19	141 45	1884	420	200	*a* 10	81	2,000	nil	..	W
	Ditto	3. **Stud Paddock***	20 14	141 44	1889	438	130	? 50	93	C ? 2,000	0 to 40		
	Ditto	4. Ruthven*	20 14	141 46	1884-86	430	128	*b* 80	..	C ? 500	0 to 5½		
	Ditto	5A. Black Gin*	20 11	141 42	1884	? 420	212	*a* 170	..	..	..	70	small
	Ditto	6. Garden*	20 15	141 44	? 1886-90	438	D 203	*b* 203	94	C ? 1,000	0 to 5		
	Ditto	7. **Boonooke***	20 13	141 46	1887	430	86	several	84	C 500	0 to 9½		
	Ditto	10A. Plugged Bore*	20 14	141 44	1889	438	210	..	..	C ? 300	6 to 34		
	Ditto	11. **Pennsylvania**	20 11	141 40	1889	410	678	*a* 638	100	34,370	12 to 66		
	Ditto	12. **Binnum**	20 22	141 49	1889	450	760	*b* 675	109	180,300	13 to 17		
	Ditto	13. Whitewood*	20 26	141 51	1890-99	476	D 760	*b* 602	100	80,830			
	Ditto	14. Brie-brie	20 29	141 54	1890	460	73	*b* 655	115	113,600			
	Ditto	17. Woolshed (*abandoned*)	20 9	141 44	1891	405	80	dry					
	Ditto	18. Bauhinia	20 15	141 44	1891	450	690	*a* 670	112	26,600	49 to 70½		
	Ditto	(*Sundry abandoned trials*)	..	..	..	..	1,100						
	Ditto	19. Burke's Point	20 20	141 47	1899	..	1,036	*b* 700	112	900,000			
	Ditto	20. The Duffer No. 1*	20 13	141 43	1899	..	700	*b* 450	..	small flow			
	Ditto	21. ditto No. 2*	20 12	141 41	1899	..	650	650	..	small flow			
	Ditto	22. Blue Lagoon	20 20	141 56	1899	..	1,008	*b* 966	..	1,300,000			
	Ditto	23. Prickly Bush	20 20	141 47	1899	..	835	*e* 835	..	2,200,000			

325	Manfred Downs Resump.	Quarrel's* (8B) Lara	20	2	141	32	1888	355	98	several	86	? 5,000	11 to 24½	..	..
	Ditto	ditto * (9) (ab'd.)	20	10	141	37	1888	? 455	288	c 95	..	..	..	..	salt
326	Manfred Downs Resump.	Oxton Downs* (15) Katnock)	20	33	141	55	1890-91	468	1,076	c 1,060	129	99,100	109 to 140		
	Ditto	ditto (16) Proa	20	38	141	59	1891	500	890	a 853	119	69,150	41 to 76		
327	Manningham	..	..		..		1909	..	400	..	..	..	..	?	good
	Ditto	..	..		..		1910	..	500	..	..	..	..	..	fair
	Ditto	..	..		..		1910	..	510	..	..	..	..	..	good
	Ditto	..	..		..		1911	..	508	..	..	..	..	..	,,
	Ditto	..	..		..		1911	..	400	..	..	..	..	..	12,000
328	Manuka Lease	1.*	21	43	143	20	1896-98	L 901	4,310	..	abt. 180	..	..	64	SP large
	Ditto	2.*	21	46	143	13	1899-01	..	3,581	..	,, 180	..	..	60	SP large
	Ditto	3.*	..		..		1907	..	219	b 219	..	..	..	100	P 12,000
	Ditto	4.*	..		..		1907	..	203	..	..	..	..	153	P 20,000
	Ditto	5.*	..		..		1907	..	224	..	..	..	..	108	P 16,000
	Ditto	6.*	..		..		1907	..	227	..	..	..	..	? 40	P 8,000
	Ditto	..	..		..		..	..	?	..	..	..	..	..	P (8,000
	Ditto	..	..		..		..	..	?	..	..	..	..	..	P to
	Ditto	..	..		..		..	..	?	..	..	..	..	..	P 20,000)
329	Manuka Resumption	Malboona G.F. 167*	21	52	143	37	1899-00	L 907	4,032	b 3,700	..	..	..	35	large
	Ditto	Vuna G.F. 154	21	22	143	30	1898-06	..	2,590	..	..	..	..	? 100	large
	Ditto	,, ,, (abandoned)	..		..		1911	..	? 600	dry					
	Ditto	,, ,,	..		..		P 1910	..	205	dry					
330	Maranoa Downs	Maranoa Downs	locality		not known		1909	..	? 2,000	..	..	700,000			
331	Marathon Lease	1. Sloan Creek	20	55	143	33	1891	..	1,090	a 1,010	98	R 1,000,000			
	Ditto	2. Bloomfield	21	4	143	24	1892	..	1,497	a 1,442	128	R 1,000,000			
	Ditto	3. Namoi Downs*	21	8	143	35	1892-99	..	D2,340	2,340	110	..	..	?	
	Ditto	4. Keira	20	44	143	34	1893	835	714	b 570	92	R 800,000			
	Ditto	5. Woolshed*	20	51	143	36	1893-02	..	D1,300	b 1,050	..	..	..	?	
	Ditto	5A. Woolshed	20	51	143	36	1907	..	? 1,300	..	..	flow			
	Ditto	6. Glenalvon	20	53	143	23	1894-00	..	D1,500	b 1,460	? 100	R 700,000			
	Ditto	7. Ramsey Downs*	21	3	143	12	1896-98	..	D2,292	b 1,950	..	..	..	?	
	Ditto	8. Cowley's	21	1	143	30	1897	..	2,029	b 1,870	120	R 700,000			
	Ditto	9.	20	54	143	40	1899	..	1,387	b 1,180	..	R 1,000,000			
	Ditto	10.	20	57	143	24	1901	..	1,800	..	..	500,000			
332	Marathon Resumption	Clare Valley G.F. 206	20	58	143	9	1898	..	1,800	..	..	R 3,000,000			
	Ditto	Tweedsmuir G.F. 181*	20	53	143	9	1895	..	D1,834	..	..	1,000,000			
	Ditto	Vernon Downs G.F. 178	20	47	143	4	1896-99	..	D2,000	..	..	R 1,600,000			
	Ditto	Baldie's G.F. 580	21	4	143	8	1898	..	2,750	b 1,900	..	R 2,000,000			
	Ditto	Thompson's G.F. 365	21	6	143	3	1899	..	2,250	..	..	R 2,000,000			
	Ditto	Moselle Downs	..		..		1909	..	2,900	..	..	300,000			
333	Marion Downs Lease	1A. Hilary (abandoned)*	23	30	139	22	1894-95 ?	..	1,100						
	Ditto	1B. ,, ,, *	..		..		1894-95	..	800						
	Ditto	1C. ,, ,, *	..		..		1894-96	..	1,710	? 1,600	..	..	..	..	salt
	Ditto	2. Kasouka*	23	15	139	50	1895-96	..	514	345	..	..	..	..	5,000

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
334	**Maxwelton Lease**	1. 12-mile Paddock *	20° 56′	142° 45′	1891-92	..	D1,850	..	126	800,000			
	Ditto	2. Hong Kong*	21 0	142 45	1892	..	1,474	..	122	600,000			
	Ditto	3. Gordon*	21 4	142 48	1892-93	..	1,590	b 1,500	120	200,000			
	Ditto	4. Rosewood Gully*	20 57	142 56	1894	..	1,434	1,330	115	200,000			
	Ditto	5. Coolibah Creek	20 47	142 54	1894	..	1,200	1,015	110	500,000			
	Ditto	6. 2-mile Home Station*	20 49	142 43	1894	..	1,407	1,107	115	600,000			
	Ditto	7. Beta*	21 4	142 41	1899-01	..	2,039	1,560	126	1,000,000			
	Ditto	8. Blantyre	20 53	142 55	1907	..	? 1,650	..	..	930,000			
	Ditto Group	Majuba, Douglas's	24 42	142 42	1910	..	1,400	..	..	380,000			
335	**Maxwelton Resumption**	Wimmera (Calder's)*	21 8	142 43	1899	..	2,000	b 1,950	..	800,000			
	Ditto	Bundorin*	20 50	142 32	1899	..	1,800	..	..	1,000,000			
	Ditto	"	..	..	1909	..	?	..	..	R 2,000,000			
	Ditto	G.F. 604, L. Simkin	21 10	143 3	1899	..	? 2,000	..	..	800,000			
336	**Merina Station***	..	locality	not known	1909	..	115	..	..	..	..	?	P large
337	**Millungera Lease**	1. **Bow-water***	19 39	141 48	1896	385	740	a 616	109½	988,000	85		
	Ditto	2.	19 50	141 41	1890	..	868	850	..	R 2,800,000			
	Ditto	3.	..	..	1900	..	857	b 857	..	R 3,000,000			
	Ditto	4.	19 51	142 3	1901	..	776	..	..	R 3,400,000			
	Ditto	5.*	19 39	141 37	1901	..	1,149	b 900	..	800,000			
	Ditto	6.											
	Ditto	7.	19 50	141 36									
	Ditto	8. Double Swamp	19 52	141 53									
	Ditto	9. Gidya Creek	19 36	141 34									
	Ditto	10.	19 57	142 1	1911	..	1,000	b 1,000	..	R 5,000,000			
338	**Milo Lease**	1. **Arnica**	25 55	144 3	1895	..	3,411	50	..	..	..	18	P 8,000
	Ditto	2. **Britomart**	25 51	144 8	P 1911	..	1,197						
339	**Minnie Downs**	1. **Fourteen Miles***	24 59	146 2	1899-02	1,430	4,040	c	..	..	..	110	SP 200,000
	Ditto	2. **Boggy Creek***	25 0	145 56	1909	1,270	? 3,900	f 3,900	..	600,000			
340	**Mitchell Environs**	**Basalt Creek, Chapman's**	26 28	148 2	P 1911	..	432						
341	**Mona Lease**	1. **Dunbar***	28 11	147 37	1894	570	2,476	2,300	124	230,000			

	Ditto	2. Whitalby*	28	5	147	46	1896-97	..	2,800		2,400	132	1,000,000				
	Ditto	3. Randwick*	27	52	147	43	1899-00	..	2,778	*b*	2,600	133	1,500,000				
342	Moreston Downs	1. Rocklands No. 1*	19	34	138	35	1906	..	309	*b*	309	..	..	..	97	P	43,200
	Ditto	2. (*abandoned*)*	..		..		1906	..	509		..	..	..	..	..		3,000
	Ditto	3. (*abandoned*)*	..		..		1907	..	300		..	..	..	..	..		2,500
343	Moreton District	Beaudesert (*abandoned*)* ..	..		..		? 1890	..	140		..	..	..	..	80		good
344	Moscow Selection	McMaster Bros.	22	40	143	40	P1910-11	..	3,300		3,120	..	10,000	..	..		..
	Ditto	ditto	..		..		1908	?	..		..	..	..	..	..	P	3,200
	Ditto	ditto	..		..		1909	..	286		..	..	..	..	126	P	good
	Ditto	ditto	..		..		1909	..	..		..	..	..	..	..	P	12,000
	Ditto	ditto	..		..		1909	..	..		..	..	..	..	..	P	12,000
	Ditto	ditto	..		..		1909	..	..		..	..	..	..	..	P	12,000
	Ditto	ditto															
	Ditto	ditto															
	Ditto	ditto															
	Ditto	ditto															
	Ditto	ditto	..		..		1909	..	..		..	..	..	..	..	P	6,000
344A	Leswalt Selection ..	McMaster Bros.	..		..		..	..	265		..	..	..	..	..		2,300
	Ditto	ditto															
	Ditto	ditto															
	Ditto	ditto															
	Siberia Selection ..	McMaster Bros.															
345	Mount Abundance ..	A.	..		..		bef. 1904	..	417	*b*	417	..	..	..	50		
	Ditto	B.	..		..		bef. 1904	..	319	*b*	319	..	..	..	40		
	Ditto	1. F.H. Block 112	26	37	148	36	..	..	1,632		..	..	180,000				
	Ditto	2. ,, 116A	26	45	148	34	1907-08	..	? 3,800		..	..	..	..	? 20		large
346	Mount Alfred	Campbell's	27	10	145	21	1910	..	2,253		..	..	1,250,000				
347	Mount Cornish Lease ..	1. Dotswood*	22	13	144	33	1892	..	2,320		..	129	400,000				
	Ditto	2. Table Derry*	..		..		1907	..	3,219		..	hot	420,000				
	Ditto	3. Acacia	..		..		1907-09	..	3,115		..	..	not known				
348	Mount Enniskillen and	A. Cattle Creek*	24	37	145	58	1891	L 1,331	40	*a*	30	75	400				
	Ditto [Birkhead Leases	B. Birkhead Station* ..	24	32	146	21	1890	L 1,381	90		..	..	..	..	43	P	
	Ditto	C. Sandy Creek (*abandoned*)*	24	31	146	24	1890	..	?		..	..					
	Ditto	D. Sawmill (*abandoned*)* ..	24	31	146	25	1890	..	90		..	..	..	..	50		1,000
	Ditto	E. (*abandoned*)*	24	31	146	31	1890	..	?		..	..	..	..	..		small
	Ditto	F. Ten-mile (*abandoned*)* ..	24	32	146	34	1890	..	? 30		..	..					
	Ditto	G. H. (*abandoned*)*	24	40	146	41	1890	..	?		..	..					
	Ditto	I. (*abandoned*)*	24	32	146	17	1895	..	65		..	..	..	..	57		
	Ditto	1. Macfarlane*	24	49	145	57	1898-06	L 1,309	3,095		..	..	? 84,880				
	Ditto	2. Racecourse*	24	43	146	1	1906-07	L 1,224	D2,300		..	..	? 254,650				
	Ditto	3. Lowdon*	24	36	146	12	1910	L 1,290	2,019	*c*	2,019	warm	? 700,000				
	Ditto	4. Cull Paddock*	24	32	146	23	1910	L 1,436	900	*b*	640	..	..	..	43	W	60,000
	Ditto	5. Rocky*	24	32	146	16	1910-11	L 1,327	1,766	*d*	1,600	warm	550,000				
	Ditto	6. Bore I.	24	33	146	15	..	L 1,327	?								
	Ditto	7. Windeyer	24	40	146	14	1910-11	L 1,320	1,695		..	..	R 175,000				
	Ditto	8. New Bore	24	45	146	0	1911	L 1,235	2,216	*e*	2,026	..	R 700,000				

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION. Latitude South.	POSITION. Longitude East.	When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN. Continuous Daily Flow in Gallons when uncontrolled.	ARTESIAN. Static Pressures in Lb., per Square Inch at Surface.	SUB-ARTESIAN. Depth of Water Level below Surface, in Feet.	SUB-ARTESIAN. Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
349	Mt. Enniskillen Resump.	1. Macfarlane Downs* ..	24° 50′	145° 54′	1910	L 1,234	350	122	..	..	..	60	3,000
	Ditto	2. ,, ,, * ..	24 50	145 52	1909	L 1,259	207	114	..	..	..	76	2,700
	Ditto	1. G.F. 1, E. J. Doyle's* ..	24 53	146 1	1910	L 1,357	805	360	..	..	..	120	3,000
	Ditto	2. G.F. 3 ,, * ..	24 52	145 59	1910	L 1,306	460	220	..	..	..	100	W ? 4,000
350	Mount Howitt Lease ..	1. Six-mile Creek	26 35	142 16	bef. 1900	..	? 100	?					
	Ditto	2. (*abandoned*)	26 48	142 25	bef. 1900	..	60	dry					
351	Mount Morris Lease ..	**Currajong**	25 56	145 39	1900-01	..	2,353	..	136	172,000	..	..	..
	Ditto Resumption ..	Norah Park, Wright's ..	..	..	1909	..	305	..	..	..	..	27	P good
352	Mount Russell Estate ..	J. Blades	..	..	1904	..	150	*a* 150	..	..	..	?	P good
	Ditto	J. Tyson (*abandoned*)	..	..	bef. 1900	..	300	dry					
	Gowrie Environs ..	..	..	..	bef. 1906	..	38	*a* 38	..	..	..	..	P 24,000
	Ditto	(*other shallow bores*)	..	..	bef. 1906	..	?	..	..	..	..	..	good
	Goombungee Town ..	Dairying Co.	..	..	1911	..	..	..	..	..	..	..	7,200
353	Muckadilla Environs ..	Crockentigh, Por. 8	26 36	148 25	1911	..	2,923	..	122	85,000			
354	Mulga Downs Lease ..	1. East*	28 48	146 55	1896	..	1,896	1,687	? 118	1,000,000			
	Ditto	2. West	28 48	147 7	1896	..	2,300	..	..	211,000			
355	Murra Murra Lease ..	Beinber	28 16	146 48	1893	..	1,891	..	126	1,339,020	very high		
356	Murweh Lease	1. **Pericoota***	27 9	146 23	1894	L 859	1,800	..	114.5	1,215,400	high		
	Ditto Resumption ..	2. **Boileau***	26 59	146 24	1891	L 936	? 1,120	no record	105	219,000	39 to 40 ?		
	Ditto Lease	3. **Woolscour***	26 59	145 48	1893	L 812	1,670	..	116.2	213,000	37 to 52		
	Ditto	4. **Neville Forest***	27 1	146 9	1894	L 838	1,760	..	112	501,700			
	Ditto	5. Woolshed*	27 0	146 2	1906-07	L 835	1,792	*h* 1,780	115	V 1,436,000	81		
357	Murweh Resumption ..	G.F. 3v (Rutherford's)* ..	26 53	146 10	1899	L 954	2,198	*c* 2,198	111.3	V 174,700	17 to 25		
	Ditto	Kenmore G.F. 294*	26 57	146 15	1899	L 939	1,938	*c* 1,938	116	V 249,000			
	Ditto	Springfield G.F. 36*	26 58	146 3	1907	L 865	1,800	1,761	112	V 330,800	40.5		
	Ditto	Quilberry, Stone's*	27 2	146 2	1908	L 829	1,925	*e* 1,877	114	V 1,400,000	73 to 80		

358	Muttaburra District ..	Brookwood (Brookes) ..	22	32	144	20	1895	..	3,065		..	160		800,000				
	Ditto	1. **Ambo G.F. 94 (Winter)** ..	22	45	144	20	1897-99	..	2,780		..	..		350,000				
	Ditto	2. Woodleigh Creek	..		..		1909	..	? 2,320		..	..	R	250,000				
	Ditto	Weewondilla G.F. 54	22	42	144	22	1903	..	3,060		..	..		90,000				
	Ditto	Acacia Downs G.F. 1007* ..	22	52	144	42	1906-08	..	D3,030		..	..	R	750,000				
	Ditto	Tuaburra (Parnell)	22	52	144	54	1905	..	2,455		..	..		350,000				
	Ditto	Penlan	locality		not known		1908-10	..	3,029		..	..	R	720,000				
	Ditto	Bergl	„		„		1910	..	330		..	..		..	..	?	P	good
359	Nanango District.. ..	Coolabunia	..		..		1899	..	193	a	179	..		..	..	168		
360	Neila Ponds Lease ..	1. Pond No. 3	20	55	142	8	1899	..	1,100		..	120		1,500,000				
	Ditto	2. ditto 2	20	43	142	3	1899	..	1,300		900	121		1,100,000				
	Ditto	3. ditto 2	20	50	142	7	1900	..	1,318		1,010	125		200,000				
361	Nive Downs Lease ..	1. Ovens*	25	23	146	19	1890-92	1,435	2,755	b	1,230	..		..	..	44	W	24,000
	Ditto	2. Ironbarks*	25	24	146	27	1893-94	1,490	3,710	c	2,500	107		..	..	? 68		50,000
	Ditto	3. Pinfire*	25	28	146	19	1898-99	1,335	D2,602		..	..		144,800				
	Ditto	4. Pelorine G.H. 397	25	38	146	15	1899	..	1,489	e	1,350	105½		243,000	18 to 25			
	Ditto	G.H. 396, Little's	25	36	146	20	P 1911	..	2,389		1,305	..		..	..	80		
	Nive Downs Resumption Yandarlo G.F. 9 * ..	1. House, Tyrewhitt's ..	25	9	146	30	1909-10	L 1,464	844		770	..		..	..	240	W	good
	Ditto * ..	2. River Paddock	25	8	146	30	1909	L 1,468	604		600	..		..	..	100	W	5,500
	Ditto * ..	3. Castle Hill	25	6	146	25	1909	L 1,488	808		800	..		..	..	104	W	10,000
	Ditto G.F. 22* ..	4. Lower Terringa	25	6	146	21	1907	L 1,391	301		260	..		..	..	100	W	10,000
	West Quarter*	1. Stockade	25	4	146	28	1910	L 1,501	1,000		650	..		..	..	300		small
	Ditto G.F. 35* ..	2. Annisfield (*abandoned*) ..	25	6	146	25	1910	L 1,495	550		dry							
	Chatham G.F. 29* ..	R. S. Lord's	25	16	146	25	1910	L 1,412	1,007	?	900	..		..	..	80		good
362	Noondoo and Bullamon [Leases	1. Narine	28	53	148	19	1896-97	..	3,098		..	..	C	1,000,000				
	Ditto	2. Dareel	28	40	148	40	1897-99	..	3,586	c	3,586	120	V	1,319,760				
363	Noorama Lease	1. Ten-Mile	28	35	146	11	1890	..	1,502		..	114		525,530				
	Ditto	2. Homestead	28	42	146	14	1891	..	1,589		..	114		388,910				
	Ditto	3.*	..		..		1907-08	..	1,756		..	..		250,000				
364	Noorama Resumption ..	1. Yarra Yarra G.F. 32 ..	28	27	146	13	1892	..	1,768		..	112	VR	2,000,000	R 200			
	Ditto	2. Camden G.F. 26	28	30	146	2	1899	..	1,632		..	..	V	1,500,000				
365	Noorindoo Lease	1. Boundary of Blocks 20 & 26	27	15	149	15	1901-04	..	3,300		..	125		..	..	25		large
	Ditto	2. Portion B	..		..		1903-04	..	3,103		..	128	V	500,000	56			
366	Normanton Town ..	Dalgonally Meat Works* (*ab'd*)	17	38	141	43	1894	sea level	100		..	..		..	..	..		salt
367	Northampton Downs ..	1. Woolscour*	24	30	145	47	1889-94	L 1,119	D1,813	c	1,803	110.5	V	733,600	31½			
	Ditto	2. Station*	24	36	145	47	1902	L 1,068	2,657	e	2,344	128	V	1,620,000	110			
	Ditto	3. Ravensbourne*	24	43	145	38	1910-11	L 1,184	3,123		..	? 120	?	830,000				
	Ditto	4.	24	51	145	33	P 1911	..	1,576		..	..		50,000				
	Ditto Resumption ..	Harden Park	24	20	145	45	1910-11	L 1,097	1,800	b	1,450	..	?	100,000				
368	Nottingham Blocks ..	G.F.	..		..		P 1910	..	540									

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
369	Oakwood Station	**Rich and Co.**	25° 40′	146° 10′	1910	..	?	..	..	flow			
	Oakwood Resumption	Oakpark G.F. 75, Munro's	26 1	145 59	1911	..	1,943	*d* 1,699	..	400,000			
370	Oondooroo Lease	1. Alba Woolscouring Co.*	21 58	143 12	1900-01	L 798	3,800	..	190	? 310,000			
	Ditto	2. Station	..	..	1905	..	? 90	*a* 90	..	..	..	?	good
	Ditto	3. (*on highest ground*)	..	..	1906	..	350	*a* 350	..	..	..	?	P 4,000
	Ditto	4.	..	..	P 1906	..	144	*a* 144					
	Ditto	?	..	..	1910	..	? 335	..	..	..	..	?	1,728
	Ditto Resumption	G.F. 327, A. Ramsay's	22 17	143 31	P 1911	..	1,350						
371	Pajingo Lease	1.	20 47	146 10	..	..	..	..	..	..	..	..	water
	Ditto	2.											
	Ditto	3.											
	Ditto	4.											
	Ditto	5.	..	..	1909	..	165	..	..	..	..	..	? 25,000
372	Oxford Downs	..	..	..	1910	..	? 953	953	..	750,000			
373	Penola Downs Lease	1. Venda Downs*	21 30	141 25	1897-98	..	1,688	..	..	..	..	? 45	P 30,000
	Ditto	2. Penola Downs*	..	..	1898-99	..	1,375	*a* 1,180	..	75,000			
374	Portland Downs	1. Portland*	23 58	144 36	1897-99	..	3,280	3,100	162	V 240,000	36 to 51½		
	Ditto	2.	..	..	1909	..	? 2,760	..	..	? 5,000			
	Ditto	3.	..	..	P 1910	..	2,114						
375	Quambeytook Lease	**Quambeytook***	21 12	142 10	1896	595	1,998	*b* 1,700	139	1,800,000			
376	Redcliffe Lease	1. **Upper Walker Creek***	21 0	144 20	1893-95	1,180	3,750	*c* 2,520	113	..	..	40 to 120	SP 44,000
	Ditto	2. Skeleton Creek	20 54	144 32	1900	..	500	..	..	..	..	100	
	Ditto	3. Lower Walker Creek*	21 5	144 16	1901-02	..	2,280	..	..	..	..	?	W large
	Ditto	?	..	..	1907	..	750	..	..	..	..	?	P good
377	Redcliffe Resumption	1. J. T. Savage	20 57	144 41	1900-01	..	? 700	..	..	..	..	?	
	Ditto	2. ditto	..	..	1901-02	..	? 800	800	..	..	..	?	large
378	Retro Capella	Retro	22 54	147 54	1909	..	? 300	300	..	..	..	40	P good

379	Richmond Downs Lease	1. Gorman Creek	20 42	143 25	1891	..	690	..	96	R 800,000			
	Ditto	2. Mountain Creek	20 30	143 19	1891	..	D 640	..	92	600,000			
	Ditto	3. *(abandoned)*	20 28	143 23	1891	..	1,166	..	..	..	..	15	
	Ditto	4. Tunis Creek*	20 29	143 23	1891	..	850	..	96	600,000			
	Ditto	5. Alexander Creek	20 25	143 17	1891	..	590	..	..	300,000			
	Ditto	6. Doncaster*	20 27	143 27	1891	..	850	..	..	..	..	?	good
	Ditto	7. *(abandoned)**	20 21	143 27	1892	..	829	..	..	..	..	90	
	Ditto	8. Lower Yanko Creek	20 35	143 25	?	..	602	..	..	300,000			
	Ditto	9. Lower Tunis Creek	20 35	143 19	..	..	598	..	..	600,000			
	Ditto	10. Rocky	..	..	1892	..	660	..	..	..	..	35	W, SP
	Ditto	11. Dutton River	20 41	143 13	1892	..	856	..	..	500,000			
	Ditto	12. Lower Mountain Creek	20 37	143 14	..	..	641	..	..	500,000			
	Ditto	13. Grampian	20 21	143 30	1895	..	615						
	Ditto	14. Prickley *(abandoned)*	20 27	143 30	1895	..	757						
	Ditto	15. Spinifex	20 23	143 34	..	..	578	..	..	..	..	?	
	Ditto	16.	..	..	1901	..	640	..	..	850,000			
	Ditto	?	..	..	1908	..	1,400	..	..	600,000			
	Ditto	?	..	..	1908	..	?	..	..	good flow			
	Ditto	?	..	..	1910	..	695	..	..	770,000			
380	Richmond Downs Resump.	Cassady's G.F.	20 41	142 53	1899	..	1,200	..	..	R 1,250,000			
	Ditto	Ladbury's	20 45	143 5	1899	..	1,410	*b* 1,410	..	R 1,600,000	over 26		
	Ditto	Boree G.F.	20 38	143 0	..	..	1,068	..	98	? 100,000			
381	Rocklands Lease	1. Pring Creek*	..	..	bef. 1892	..	415	*c* 311	80	..	..	278	P 700
	Ditto	2. Barwidgie*	..	..	,, 1892	..	300	..	80	..	..	240	P 1,800
	Ditto	3. Ruby Creek*	..	..	,, 1892	..	350	..	80	..	..	243	P 1,800
	Ditto	4. Don Creek*	..	..	,, 1892	..	380	..	80	..	..	208	P 1,800
	Ditto	5 and 6 in S.A.*	..	..	..	..	..	..	..	..	..	..	..
	Ditto	7. Six-mile*	..	..	,, 1892	..	800	..	80	..	..	185	P 1,800
	Ditto	8. Chester Creek	19 55	138 7	1892	..	400	..	80	..	..	325	P 1,800
	Ditto	9. Elizabeth Creek	..	..	..	..	379	..	80	..	..	285	P 1,800
382	Rockwood and Ludgate	1. Glenariffe*	21 40	144 45	1891-97	985	4,220	*c* 3,760	121½	12,430	2 to 3½		
	Ditto [Hill Leases	2. Rocky Creek*	21 46	144 7	1897	..	2,650	? 1,600	hot	350,000			
	Ditto	3. Rockwood Station*	21 46	144 17	1897	..	2,508	..	..	400,000			
	Ditto	4. Ludgate Hill No. 2*	21 35	144 44	1897	1,025	1,232	..	..	..	..	100	SP 12,000
	Ditto	5. Norwood	21 47	144 22	1898-99	..	2,616	..	..	60,000			
	Ditto	6. Ludgate Hill No. 3*	21 44	144 54	1897-98	..	1,080	..	..	..	..	90	SP 16,000
	Ditto	7. Stenhouse	21 56	144 25	1898-99	..	2,660	..	..	60,000			
	Ditto Resumption	Stuart and McCaughey	21 42	144 21	1909	..	? 3,000	..	..	?			
383	Rodney Downs Lease	Rodney	23 20	144 52	1895-96	..	2,227	*b* 2,100	130	607,000			
384	Roma Downs Estate	Roma Downs	26 36	148 52	1901	..	1,627	..	..	165,000			
385	Roma Town	**Mineral Oil Company***	26 34	148 46	1907-10	1,030	3,715	1,590	..	138,000			
386	Rosewood District	1. Glenalvon Co. *(abandoned)**	27 46	152 34	1907	..	105	..	..	..	..	soakage	brackish
	Ditto	2. ,, ,, *(abandoned)**	..	..	? 1907	..	168	..	..	..	..	,,	,,
387	Ruthven Run	1. Melton*	24 7	144 4	1903-05	..	4,105	4,070	very hot	340,000			
	Ditto	2. Bonnie Downs*	24 12	143 59	1905-08	..	4,515	3,930	very hot	46,080	70		
	Ditto	(near Isisford)	..	..	1910	..	500	..	..	..	..	?	P 24,000

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION. Latitude South.	Longitude East.	When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN. Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	SUB-ARTESIAN. Depth of Water Level below Surface. in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
388	Saltern Creek Lease	1. Hugden*	23° 30′	145° 7′	1889-93	920	D1,430	..	97	..	..	50	W
	Ditto	2. St. Clears*	23 18	145 9	1889-92	high	D1,835	*c* 1,770	113	..	..	18	
	Ditto	3. Penycoed	23 13	145 4	1890	low	1,970	..	128	600,000	R 49		
	Ditto	4. Packsaddle*	23 28	144 59	1892	low	1,594	..	123	500,000			
	Ditto	5. Woolshed*	23 19	145 3	1892	low	1,992	..	123	400,000			
	Ditto	6. Bristol*	23 14	145 7	1892	low	1,873	..	116	400,000			
	Ditto	7. Saltern*	23 27	145 12	1893	? 930	1,863	..	110	..	..	36	W large
	Ditto	8. Clifton*	23 31	145 4	1893	? 800	1,268	*a* 680	112	300,000			
	Ditto	9. Hyde Park*	23 23	145 11	1898	? 870	1,620	..	..	500,000			
	Ditto	10. *	..	..	1899	..	1,610	..	..	700,000			
	Ditto	11.	..	..	1899-00	..	2,318	..	..	700,000			
389	Sandringham Lease ..	1.	23 39	138 47	..	..	143	..	hot	40,000			
	Ditto	2.	23 36	138 53	..	..	160	..	..	180,000			
	Ditto	3.	23 46	138 39	..	..	280	..	..	20,000			
	Ditto	4.	23 45	138 49	..	..	140	..	..	30,000			
	Ditto	5.	24 5	138 52	..	..	430	..	..	250,000			
	Ditto	6.	23 50	138 40	..	..	50	..	..	small			
	Ditto	7.	23 57	138 33	..	..	45	..	..	small			
	Ditto	**Amaru, Mackinnon's** ..	..	..	1911	..	202	*a* 190	..	22,000			
390	Savannah Downs.. ..	1.*	19 40	141 50	1899	..	795	*b* 790	95	R 1,150,000			
	Ditto	2.*	19 46	141 59	1899	..	830	*b* 830	? 80	R 3,400,000			
391	Saxby Downs	1. **Central**	20 6	142 39	1893	596	772	*a* 625	104	316,000	58 to 77		
	Ditto	2. **Mill Mill**	20 8	142 30	1893	496	543	*a* 525	99	456,000	54 to 91		
	Ditto	3. Amby	19 56	142 54	1900	..	841	..	..	..	..	?	?
	Ditto	4. Denham Plains	20 3	142 49	1900	..	606	..	..	1,200,000			
	Ditto	5. Upper Saxby River ..	19 52	142 48	1901	..	868	..	..	800,000			
	Ditto	6. Lower Saxby River ..	19 57	142 34	1901	..	987	..	..	2,400,000			
	Ditto	7. **Upper Mill Mill**	19 57	142 55	1902	..	752	..	..	700,000			
	Ditto	..	..	..	1908	..	500	..	..	flow			
	Ditto	..	..	..	P 1909								

392	Saxby Downs Resumption	1. Trivalor G.F. 815	20 16	142 34	1900	..	800	..	..	600,000			
	Ditto	2. ,, ...	..	..		..	900	..	..	700,000			
	Ditto	Townshend's	20 11	142 43	1900	..	508	..	..	600,000			
	Ditto	C. A. Bennett's	20 13	142 47	1901	..	690	..	..	800,000			
393	Scottstown	..	..	..	P 1910	..	500						
394	Sesbania Lease	1. Cooma*	21 24	143 16	1896	848	2,702	a 2,300	? 150	200,000			
	Ditto	2. *	21 33	143 15	1898	852	D3,252	..	? 170	..	..	? 6	large
	Ditto	3. *	21 36	142 56	1898-99	679	2,941	b 2,900	? 150	1,000,000			
	Ditto	4. *	21 40	142 48	1899-00	747	3,103	b 2,630	? 180	1,000,000			
	Ditto	5. *	21 47	143 4	1901-02	..	3,186	a 200	? 170	1,000,000			
	Ditto	6. Waiora Creek	..	..	1909	..	3,182	..	..	750,000			
395	Springvale Lease	1. Prairie Creek	23 32	140 29	1897-99	..	900	..	..	750,000			
	Ditto	2. Ida Creek	23 42	140 39	1900	..	1,400	..	..	1,500,000			
	Ditto	3. Drinan's Gorge No. 1 ..	23 31	140 42	..	..	1,375	..	..	1,500,000			
	Ditto	4. Eton Vale No. 3	23 45	140 25	..	..	1,342	..	..	1,050,000			
	Ditto	5.	..	..	1908	..	?						
396	Stagmount	Station	..	..	1910	..	2,000	..	..	R 200,000			
397	St. George District ..	Cawildi (Narlene G.F.) ..	28 25	148 9	1907	..	? 2,740	..	..	? 50,000			
	Ditto	Wild Horse Plains	..	..	1911	..	2,320	..	..	2,000,000			
	Boombah Resumption	Myall Plains, Por. 7	28 12	148 38	1907-08	..	3,024	g 3,024	..	1,355,000			
398	Strathdarr Lease	1. Station	..	..	1907-08	..	? 300						
	Ditto	2.	..	..	1908	..	400	..	..	..	..	..	P 30,000
	Ditto	..	..	..	1909	..	412	..	..	..	..	..	P 4,000
	Ditto	..	..	..	1909	..	?	..	..	..	..	..	P 16,000
	Ditto	..	..	..	P 1910	..	? 250						
399	Strathfellan	C. Denne	locality	not known	P 1909	..	? 260	..	..	..	..	..	1,200
	Ditto	..	,,	,,	1910	..	? 350						
400	Talgai West	Talgai*	..	..	? 1905	..	115	e 115	..	..	..	20	P large
	Ditto	*Other shallow bores*	..	..	? 1905	..	?	..	..	..	..	..	P good
401	Tallwood Resumption ..	Yarrandine (Donelly).. ..	28 14	149 20	1907-09	..	3,240	..	..	300,000			
402	Tambo Environs—Narada [Downs												
	Ditto	1. Reserve, Browne*	24 57	146 11	1908	L1,357	680	620	..	..	..	160	W 7,000
	Ditto	2. Horse Paddock (*aban'd*) ..	24 56	146 10	1908	L1,362	? 700	dry					
	Ditto	3. Bailey's*	24 58	146 8	1909	L1,378	958	958	..	..	..	240	8,000
	Ditto	4. Eastbourne*	25 1	146 6	1910-11	L1,407	488	437	..	..	..	120	7,000
	Ditto	5. (*abandoned*)..	..	..	1911		?	dry					
403	Tambo Lease	1. Mailhouse*	24 56	146 23	1889-90	L1,364	1,910	b 1,870	105	V 29,780	8 to 11		
	Ditto	2. Washpool*	24 56	146 19	1891	L1,391	2,670	b 2,500	114	V 66,770	5½ to 6½		
	Ditto	3. Mount Pleasant*	24 51	146 23	1894	L1,466	2,010	b 1,800	..	..	..	56	W large
	Ditto	4. Top Gin*	24 49	146 19	1907	L1,406	190	150	..	..	..	135	W fair
404	Tamworth Lease	Tamworth*	21 7	143 40	1896-97	..	2,323	..	..	280,000			

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed, Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
405	Tangorin District	Antrim G.F. 176*	21° 39′	144° 19′	1895-97	..	D2,250	..	..	400,000			
406	Tara Grazing Farms	1. Glenelg G.F. 3v*	23 36	145 3	1890-94	950	D2,847	*b* 1,750	..	..	..	44	P 50,000
	Ditto	2. Somerton G.F. 7v*	23 36	144 54	1891-93	955	2,933	*c* 2,870	149	..	..	46	P 250,000
	Ditto	3. Brighton G.F. 4v*	23 34	144 48	1891-92	915	? 2,213	*c* 2,125	134½	..	..	40	
	Ditto	4. G.F. 3v	23 37	145 7	1906	..	3,000	..	..	R 750,000			
	Ditto	5. G.F. 11v	23 39	145 4	P 1907	..	2,800						
407	Tarbrax Lease	1. Nelia	21 16	142 42	1893	..	1,833	..	150	R 1,500,000			
	Ditto	2.	..	..	1908	..	2,066	..	..	1,000,000			
	Ditto Resumption	Magoffin Bros.	..	..	1909	..	? 1,792	1,792	..	R 1,250,000			
408	Taroom District	Wooleebee Creek	..	..	1910	..	70	..	..	small flow			
409	Tatala Lease	1.*	27 30	146 43	1911	..	1,633	1,607	..	370,000			
410	Telemon Lease	1 **Woolshed***	20 43	143 45	1893-95	880	D 840	500	94½	V 293,700	15½ to 24		
	Ditto	2. **Whitewood***	20 42	143 53	1895	910	553	no record	92	427,000			
	Ditto	3. **Telemon***	20 46	143 44	1895-96	950	D1,205	1,020	104	453,600	22½ to 24½		
	Ditto	4. **Sawpit***	20 38	143 41	1896	885	975	720	103	865,400	38½ to 45½		
	Ditto	5. **Southerness***	20 46	143 51	1897	1,010	1,293	1,000	warm	..	..	? 4	good
	Ditto	6. Ballia Hill*	20 37	143 43	1898	..	989	..	? 110	R 1,000,000			
	Ditto	7. Portion 8*	20 45	143 53	1899	..	1,036	..	105	300,000			
	Ditto	?	..	..	1910	..	883	..	..	R 1,750,000			
	Telemon Resumption	1. Sylvania G.F. 77*	20 48	143 56	1895-00	976	D1,297	? 900	97	? 202,400	6½ to 9½		
	Ditto	2. Annandale G.F. 76*	20 48	143 48	1895	940	1,195	1,000	104½	? 178,600	17 to 22½		
	Resumption ?	Essex Downs	..	..	1911	..	2,459	..	..	R 1,000,000			
411	Terrick Terrick Lease	Lorne	24 50	145 17	1907-09 ?	..	4,057	3,999	175	? 250,000			
412	Townsville	Pumping Station	..	..	1901	..	103	*a* 50	..	..	..	?	
413	Thurulgoona and Bundaleer Leases	1. Thurulgoona ?	28 37	146 3	1886-87	..	D1,290	..	108	93,120			
	Ditto	2. Diana	28 52	146 2	1887-92	..	D1,682	*a* 1,440	117½	426,900			
	Ditto	3. Coogee*	28 54	146 15	1887-90	..	D1,630	*a* 1,660	110	105,100			
	Ditto	4. Prairie	28 42	146 23	1887-92	..	D2,037	..	103½	18,130			
	Ditto	5. Little J. Boden*	28 39	146 32	1891	..	1,862	*b* 1,862	116	296,900			

	Ditto	6. Bundaleer No. 2	28	34	146	32	1888-90	..	D1,612	..	119½	184,380			
	Ditto	7. Waverley	28	48	146	18	1891-92	..	1,672	..	109	51,250			
	Ditto	8. Bundaleer No. 9	28	52	146	24	1892	..	1,685	..	110	220,020			
	Ditto	9. Saltbush	28	29	145	52	1892-93	..	1,785	..	..	R 2,500,000			
	Ditto	10. Eaglehawk	28	47	146	25	1892	..	1,866	..	110	42,360			
	Ditto	11. Block D4, No. 10* ..	28	35	145	46	1893	..	1,710	..	114	1,207,330			
	Ditto	12. Randwick	28	52	146	9	1897-98	..	1,680	..	112	R 2,000,000			
	Ditto	13. Bulloo	..			..	1906	..	1,866	..	..	V 1,500,000			
	Ditto	14. Stake Yards	..			..	1906	..	1,472	..	..	V 750,000			
	Ditto	15. Bundaleer	..			..	1907	..	1,594	..	..	100,000			
	Ditto	16.	..			..	1908	..	1,786	..	..	R 2,000,000			
414	Tilbooroo Lease	Ardine	27	38	144	50	1895-96	..	2,510	..	..	? 40,000			
415	Tilbooroo Resumption ..	Gidgerah G.F. 193*	27	52	145	24	1898	..	2,020	..	115.5	49,710	19 to 43		
	Ditto	Eumarrah G.F. 126*	27	59	145	20	1899	..	1,325	4 W. beds	109.5	74,650	46 to 81		
	Ditto	Goora (Rutherford's)* ..	27	47	145	26	1897	L 954	1,583	..	117	V 1,174,000	94 to 97		
	Ditto	Hazelfield, McCormack* ..	27	46	145	19	1910	..	1,538	g	116.7	V 1,545,000	96 to 119		
	Ditto ?	Big Creek	..			..	1910-11	..	2,437	..	..	2,200,000			
416	Tinnenburra Lease ..	1. **Kungie***	28	40	145	14	1890	..	1,255	1,000	112	V 257,640			
	Ditto	2. **Petite**	28	33	145	4	1891	..	992	a 933	112	V 1,948,780			
	Ditto	3. **Mulgar**	28	30	145	15	1891	..	1,292	900	113	V 135,070			
	Ditto	4. **Mulgar No. 9**	28	54	145	1	1891	..	852	..	105	220,020			
	Ditto	5. **Mulgar No. 11**	28	54	145	11	1892	..	1,458	..	120	277,280			
	Ditto	6. (N.S.W.)*													
	Ditto	7. **Boortra**	28	54	145	27	1892	..	1,429	..	121	1,984,820			
	Ditto	8. **Tuen**	28	47	145	42	1893	..	1,518	1,400	117.5	V 1,871,400	? 177		
	Ditto	9. **Tinnenburra No. 1** ..	28	48	145	22	1893	..	1,466	1,420	120	360,150			
	Ditto	10. Mulgar No. 10	28	46	145	9	1893-96	..	? 1,610	700	106	30,000			
417	Tongy Lease	Northern End	27	17	147	9	1900-02	..	2,800	..	128	1,500,000			
418	Toolburra South ..	*Six bores in valley*	..			..	1904-05	..	20 to 50	..	..	..	..	..	good
	Ditto	*One bore on high ground* ..	..			..	..	..	100	..	..	..	..	..	good
419	Toolebuc Lease	1. Station*	22	11	140	52	1893	710	917	a 560	100½	..	..	33	Wh 40,000
	Ditto	2. Garden*	22	16	140	50	1893	650	533	b 441	95	V 12,040	2½		
	Ditto	3. Tooleybuc No. 1* ..	22	3	140	55	1894	725	809	a 226	..	..	..	40	small soakage
	Ditto	4. (*abandoned*)*	22	13	140	44	1894	? 630	456	a 182	..	..	..	..	
	Ditto	5. **Tooleybuc No. 3*** ..	22	11	140	47	1894	637	441	b 407	95	V 17,700	about 2		
	Ditto	6. ditto*	22	13	141	2	1894	705	879	a 640	..	..	..	15	Wh 150,000
	Ditto	7. ditto No. 7* ..	22	7	141	7	1894-95	? 725	1,196	a 800	..	..	..	22	large
	Ditto	8. ditto No. 1* ..	22	8	140	54	1895	690	609	a 525	..	..	..	8	20,000
	Ditto	9.	22	22	140	42	1898	..	1,024	..	..	..	..	42	
	Ditto	10. (*abandoned*)	22	13	140	50	1898	..	231						
	Ditto	11. (*abandoned*)	22	5	141	10	1898	..	445						
	Ditto	12. (*abandoned*)	..			..	1898	..	495						
	Ditto	13.	..			..	1898	..	711	..	..	..	..	90	
	Ditto	14.	..			..	1898	..	395	..	..	..	..	11	
	Ditto	15. (*abandoned*)	..			..	1898	..	359						
	Ditto	16.	..			..	1899	..	913	..	..	..	..	28	

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes.	POSITION. Latitude South.	Longitude East.	When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN. Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	SUB-ARTESIAN. Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
420	Toorak Lease	1. **Wild Duck***	21° 1′	141° 38′	1891-97	485	D1,293	*a* 1,200	129½	454,000			
	Ditto	2. Garden*	21 11	141 51	1891-97	560	D1,670	*a* 1,414	136	784,000			
	Ditto	3. Kates*	21 7	141 41	1896	525	1,460	..	132	784,000			
	Ditto	4. Station*	21 2	141 47	1896-97	482	1,497	..	135	731,000			
	Ditto	5. Wild Duck (New) ..	..	..	1905	..	1,425	..	130	1,000,000			
421	Tower Hill Lease.. ..	Yanga*..	22 3	144 35	P1901-07	..	D2,430	..	..	..	..	nr. surf.	
	Tower Hill Resumption ..	Needlewood	21 51	144 47	1901	..	1,700	*a* 1,600	..	..	..	20	SP good
422	Tulby or Talawanta Lease	1. Tala*	28 56	147 2	1892	..	1,750	? 1,750	125	1,700,000			
	Ditto	2. Tego	28 48	146 51	1892	..	1,780	? 1,780	120	619,910			
423	Tulga Selection	C. Avery's	..	..	1910	..	560	..	..	..	..	90	good
	Ditto	ditto	..	..	1910	..	495	..	..	..	..	?	small
	Ditto	ditto	..	..	1911	..	721	..	..	..	..	130	large
424	Tull's Block	..	..	..	1910	..	? 305	305	..	..	..	?	P good
425	Tullundunna Lease ..	McCaughey's*	26 48	147 30	1911	..	3,030	*g*	..	300,000			
426	Ularunda Lease	..	26 47	147 3	P 1908	..	600	600	..	20,000			
427	Uanda Resumption ..	1. Wingera G.F. 17v* ..	21 34	145 0	1899	..	935	..	..	..	..	40	SP good
	Ditto	2. ditto 10v* ..	21 29	144 49	1899-00	..	D1,355	..	..	..	..	111	SP good
	Ditto	3. ditto 15v	21 29	145 5	1900	..	1,013	930	..	..	..	60	SP 50,000
428	Uanda Resumption ..	1. Shirley G.F. 16v	21 28	145 0	1899	..	810	690	..	..	..	60	W good
	Ditto	2. ditto 7v*	21 22	144 56	1900	..	920	800	..	..	..	? 100	SP good
	Ditto	3. ditto 8v*	21 26	144 54	1900	..	1,350	910	..	..	..	? 100	SP good
	Ditto	4. ditto 12v*	21 32	144 44	1900	..	790	685	..	..	..	80	SP 50,000
429	Victoria Lease	1. and 2. (*no data*)											
	Ditto	3.	..	..	1907	..	?	..	..	..	..	?	P 10,000
	Ditto	4.	..	..	1907	..	300	..	..	..	..	?	P 14,000

430	Vindex Lease	A. *Old bore*	..	..	..	..	110	..	..	..	..	15	
	Ditto	B. *ditto*	..	..	..	..	150	..	..	..	..	?	
	Ditto	C. *ditto (abandoned)* ..	..	..	..	..	187	dry					
	Ditto	1. *(abandoned)**	22 35	143 33	1888-89	? 765	1,800						
	Ditto	2.	22 34	143 33	1898-00	L 849	4,000	3,900	190	300,000			
	Ditto	3.	..	..	1901-02	..	3,795	..	182	350,000			
	Ditto	4. *(abandoned)*	..	..	1908	..	?						
	Ditto	5. *	..	..	1909	..	470	*c* 391	..	..	..	140	P 20,000
	Ditto	6.	..	..	1910	..	? 382	..	..	..	..	..	P 5,000
431	Warbreocan Lease ..	Mutti Mutti No. 4*	24 25	142 46	1894-98	..	4,333	*b* 3,900 ?	183½	43,360	6½		
432	Warenda Lease	1. Warenda Creek*	22 43	140 19	1890	605	1,075	*c* 410	80	..	..	72	P 50,000
	Ditto	2. **Palparara**	22 41	140 36	1892	518	184	*c* 165	85	49,000	10 to 14		
	Ditto	3. Mommedah	22 36	140 34	1891	545	340	*a* 56	82	4,220	1 to 2		
	Ditto	4. Pollygammon	22 47	140 42	1891	487	511	*c* 500	93	113,000	13 to 25½		
	Ditto	5. Slasher's Creek	22 53	140 43	1891	517	715	*b* 714	102½	V 495,000	24 to 32½		
	Ditto	6. **Bunda**	22 55	140 39	1891	485	559	*b* 490	101½	V 687,000	16 to 41		
	Ditto	7. Horse Creek	22 58	140 45	1891-92	518	777	*c* 733	110	327,000	20 to 37		
	Ditto	8. Station*	22 39	140 30	1892	562	315	*a* 98	80	..	..	53	Wh 6,000
	Ditto	9. Drafting Yard	22 45	140 32	1892	505	208	*c* 178	83½	6,000	3		
	Ditto	10. Woolgunnia	22 32	140 47	1892	505	653	*c* 489	95	V 111,600	9 to 18		
	Ditto	11A. *(abandoned)**	22 35	140 32	1892	? 535	178	*a* 115	..	..	..	36	
	Ditto	11B. Home Paddock* ..	22 38	140 34	1892	532	60	*b* 51	78	..	..	5	P 6,000
	Ditto	12. Tilky*	22 32	140 33	1892	? 560	75	*b* 49	79	..	..	10	P 5,000
	Ditto	13. **Gydhya**	22 25	140 49	1892	622	590	*b* 510	101	V 139,500	4½ to 7		
	Ditto	14. Tipperary	22 34	140 45	1892	555	440	*c* 429	94	V 111,600	11 to 22		
	Ditto	15. Black Ridge	22 37	140 43	1893	535	363	*a* 360	90	V 100,000	3 to 15		
	Ditto	16. Tailings Yards	22 33	140 35	1893	562	172	*a* 135	83	23,000	4 to 5½		
	Ditto	17A. Bloodwood Pad.* *(ab'd)*	..	..	1893	? 510	143	*a* ? 90	..	..	..	..	very small
	Ditto	17B. Windmill*	22 43	140 32	..	522	176	*a* 111	81	..	..	14	W 10,000
	Ditto	18. Redhead	22 47	140 32	1893	500	192	*b* 132	83½	14,700	2 to 6		
	Ditto	19. **Warra***	23 5	140 36	1893	568	780	*b* 685	111½	423,950			
	Ditto	20. Warenda, No. 3	..	..	1898	..	188	..	..	10,000			
	Ditto	21. ditto No. 1	..	..	1898	..	275	..	..	25,000			
	Ditto	21A. *(abandoned)**	..	..	1898	..	100						
	Ditto	22. Warenda, No. 1	..	..	1899	..	160	..	..	24,000			
	Ditto	23. Hathorn, No. 4	..	..	1899	..	904	..	110	400,000			
	Ditto	24. Hamilton, No. 11 ..	..	..	1899	..	840	..	108	336,000			
433	Wardsdale	..	Mitchell	..	1910	..	? 1,350	..	..	50,000			
434	Warwick District	1. Canning Downs	..	..	1902	..	208	*a* 208	..	..	..	68	good
	Ditto	2. ditto	..	..	1902	..	? 100	..	..	..	..	?	
	Ditto	3. ditto*	..	..	1903	..	115	*b* 115	..	..	..	20	P 12,000
	Ditto	Glengallan Valleys*	..	..	bef. 1906	..	?	?	..	..	..	..	P good
435	Weelamurra Lease ..	1. King's*	28 16	146 15	1888 97	621	D1,800	1,800	..	V 2,000,000			
	Ditto	2. Shaft and Bore*	28 13	146 12	(old)	..	280	..	..	..	..	?	?

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TABLE OF BORES—*continued.*

Reference No.	Locality.	Name of Bore and Notes. Where Black Type—*See* Table of Water Analyses. Where *—*See* Bore Notes. (Same Reference No.)	POSITION.		When Sunk.	Surface of Ground above Mean Sea Level, in Feet.	Total Depth of Bore, in Feet.	Depth to Principal Water Bed. Feet below Surface.	Temperature of Water, Fahrenheit Degrees.	ARTESIAN.		SUB-ARTESIAN.	
			Latitude South.	Longitude East.						Continuous Daily Flow in Gallons when uncontrolled.	Static Pressures in Lb., per Square Inch at Surface.	Depth of Water Level below Surface, in Feet.	Volume Pumped or Available Daily, in Gallons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14
436	Wellcamp	(several bores)	..	..	bef. 1906	..	shallow	..	..	..	..	..	P good
	Ditto	Coal formation (11 ft. thick) ..	..	..	,, 1906	..	? 60	..	..	..	..	..	P 24,000
	Westbrook Creek	1. Rev. St. John Pugh's ..	..	..	,, 1906	..	? 40	*a* 40	..	..	..	? 40	P large
	Ditto	2.	..	..	,, 1906	..	? 40	*a* 40	..	..	..	? 40	P large
437	Wellshot Lease	1. Bradninch*	23° 52′	144° 17′	1892-93	890	3,504	*c* 3,350	171	V 149,500	20 to 34		
	Ditto	2. Dartmouth*	23 44	144 36	1894	913	2,639	*d* 2,639	151	V 334,400	21 to 27		
	Ditto	3. Totness*	23 46	144 24	1894-95	? 789	3,561	*e* 3,417	169	V 345,200	42 to 58		
	Ditto	4. Station	23 54	144 29	1901-02	..	3,698	..	168	380,000			
	Ditto	5. Collumpton	..	..	1907-08	..	? 2,700	*b* 2,340	..	300,000			
	Ditto	6.	..	..	P 1911	..	1,833						
438	Werie Ela and Wild Leases	1. Bundilla	27 44	144 25	1890-91	..	1,751	..	160	R 150,000			
	Ditto	2. Wild	27 48	144 29	1911	..	2,468	*e* 2,467	..	2,500,000			
439	Westland Lease	1. Tocal or Woolscour* ..	23 58	143 47	1893-98	678	? 2,980	*b* 2,780	156	V 15,200	34 to 62		
	Ditto	2. **Buffalo***	24 2	143 57	1893-96	802	3,480	*c* 3,300	176½	37,600	42 to 80		
440	Whitula Lease	1. Gibber Creek (*abandoned*)*	25 9	142 10	1891	..	2,138	..	..	..	..	? 80	
	Ditto	2. Talpy (*abandoned*)* ..	25 29	142 26	1892	..	1,469	..	..	..	..	70	small
441	Widgeegoara	1. Quambone East ?	28 31	146 26	1883	..	215	..	..	..	..	45	50,000
	Ditto	2. Balbon ?	..	..	..	..	215	..	..	..	..	42	24,000
	Ditto	3. Quambone ? (*abandoned*) ..	28 31	146 20	1884	..	210	..	..	..	..	..	salt
	Ditto	4. Quambone East ? (*ab'd.*) ..	28 32	146 23	1884	..	133	12	..	..	..	..	salt
442	Winton North District ..	Cooinda G.F. 37	21 52	142 52	1898-99	L 655	3,298	*c* 3,250	161	800,000			
	Ditto	Marsh's Selection	..	..	1907	..	300	..	..	..	..	..	very little
	Ditto Wyora Station	Wyora G.F. 119 (deep) ..	21 54	143 5	1899-00	L	3,600	*a* 3,020	? 160	? 250,000			
	Ditto ,,	(*shallow bore, old*)	..	..	1905	..	200	..	..	..	..	?	?
	Ditto ,,	,, ,, ,, ...	..	..	1905-06	..	250	..	..	..	..	?	?
	Ditto ,,	1. G.F. 106	21 49	143 18	1909	..	244	..	..	..	..	90	P 4,000
	Ditto ,,	2. G.F. 106	21 48	143 10	1909	..	293	..	..	..	..	150	P 6,000
	Ditto ,,	3. G.F. 119	21 53	143 8	1909	..	297	..	..	..	..	150	P 2,000
	Ditto ,,	4. G.F. 57	22 3	143 0	1909	..	304	..	..	..	..	181	P 5,000
	Ditto ,,	5. G.F. 106 (*a well*)	21 52	143 13	1909	..	301	..	..	..	..	180	P 2,200
	Ditto ,,	Mahrigon (3 *bores*)	..	..	..	..	250 to 280	..	..	..	..	..	over 12,000

	Wando Selection	..	near	Vindex	1909	..	327	..	..	..	..	..	very small
	Strathfielan Selection	..	..	..	1909	..	384	..	..	..	..	..	P 22,000
443	Winton South District	Melrose (Magoffin's)	22 46	143 19	1897	..	? 250	..	..	..	..	..	very little
	Ditto ?	1. Aldingham	locality	not known	1909	..	240	..	..	..	..	..	5,000
	Ditto	2. ditto	,,	,,	1909	..	320	..	..	..	..	..	12,000
	Ditto	3. ditto	,,	,,	1909	..	325	..	..	..	..	..	14,000
444	Wondoola Lease	Jenny Downs No. 3*	19 7	140 56	1902	..	1,521	*a* 1,390	..	37,700			
445	Woolerina Lease	1. Kulki	28 27	147 17	1894	..	2,482	2,000	129½	V 1,395,190			
	Ditto	2. Gamma	28 27	147 35	1896	..	2,908	2,500	138	V 1,760,310			
446	Whyenbah	..	..	..	P 1911	..	2,098						
447	Yandilla Station	(A well)* G. R. Gore	27 50	151 20	bef. 1903	..	54	*a* 54	..	..	..	?	SP 52,800
	Ditto	(*Other wells*)	..	..	,, 1903	..	..	..	..	..	..	..	P large
448	Yarmouth Lease*	Henderson's*	27 33	146 15	1896	L 712	1,783	1,633	118.5	1,475,100	104 to 112		
	Ditto	Well No. 1	27 38	146 11	bef. 1900	L 685	49	fresh	71.2	..	..	28	860
	Ditto	Well No. 2	27 34	146 14	1900	L 683	88	brackish	..	..	..	33.5	good
	Ditto Resumption	Cobbrum, M. Brown*	27 31	146 26	1899	L 727	1,670	no record	116.5	V 1,633,500	92 to 97		
449	Yarrawonga Lease	Ada ?	26 21	146 36	1898	..	3,000	..	..	..	..	? 150	SP large
450	Yarron Vale Lease	Woodstock*	26 44	145 31	1891-93	..	2,293	..	136	V 79,860			
451	Yarrowmere Lease	Lake Buchanan (*abandoned*)*	21 30	145 50	1891	..	420						
452	Yorkshire Downs	1. Julia Creek G.F. 989*	20 56	142 1	1907	..	1,433	*e* 1,249	..	1,460,000			
	Ditto	2.	..	..	1910-11	..	?	902	..	small flow			
453	Yowah Lease	T. J. Elliott's	27 58	144 38	P 1911	..	1,468	..	..	1,000,000			

NOTE.—*References* to letters before the figures and after names are at the beginning of Table. *Notes on Bores* at end of Table of Water Analyses.

WATER ANALYSES (ARTESIAN, &c.).

NOTES.—Except where otherwise mentioned, analyses were made in the Government Analyst's Laboratory (J. B. Henderson, Government Analyst).

Analyses made prior to 1893 are considered to be quite unreliable, and are not quoted.

ABBREVIATIONS.—Sub., Sub-artesian bore; Art., Artesian bore; Spr., Spring; W.H., Waterhole.

For further details, *see* Table of Artesian Bores (page 21) and Notes on Artesian Bores (page 78). *See also under* Name of Bore in Index.

Reference to Bore Table and Notes.	Locality of Bore, Spring, or Lagoon.	Source.	Date of Analysis.	GRAINS PER GALLON.								Hardness.	PARTS PER MILLION.			Remarks. (Quantities in Grains per Gallon.)
				Total Solids.	Silica, SiO_2.	Iron, Fe_2O_3 and Alumina.	Calcium Carb.	Magnes. Carb.	Sodium Carb.	Sodium Chlorides.	Sulphates.		Free Ammonia.	Albuminoid Ammonia.	O. for moist combustion.	
1	Adavale (Government)	Art.	Mar. '01	55.23	0.56	0.14	15.75	..	..	..	nil	..	..	..	..	Magnesium chloride = 8.4; pot and soda; chlorides, 18. Fixed susp. matter 44.5; volatile susp. matter, 10.7; potash and soda not determined. Instructions for taking sample not adhered to. Anal. by J. C. Brünnich.
	Ditto	Art.	Jan. '01	88.71	2.01	0.36	0.70	0.27	63.59	21.78	trace	..	..	..	..	Water unsuitable for irrigation purposes.
4	Bando (Government)	Art.	Feb. '97	27.20	2.00	0.80	1.30	0.85	14.80	7.40	0.05	..	..	..	..	Good for all purposes; carbonic acid, 1.00.
4	Bando (Government)	Art.	Mar. '99	29.85	..	..	..	..	..	..	trace	0.55	none	trace	1.96	Useful for all purposes. No nitrates; total Cl., 4.6. Anal. by J. C. Brünnich.
8	Blackall, Dickson's	Art.	Dec. '99	69.00	2.40	0.60	2.00	trace	48.00	16.00	none	..	..	..	..	Potassium carbonate traces.
12	Rocklands, Camooweal ..	Sub.	May, '97	40.37	3.30	0.90	6.70	8.23	..	11.44	6.12	28	..	..	..	Cal. sulphate, 6.12; mag. chloride, 3.68; potable, but too hard for most purposes, except irrigation.
18	Cunnamulla Town	Art.	Aug. '01	34.82	2.19	0.25	0.69	0.45	24.48	6.76	trace	..	..	..	..	Suit domestic and stock purposes.
21	Dalby	Art.	May, '01	124.59	2.34	0.40	0.65	0.38	65.38	55.44	..	..	..	..	..	Contains too much carb. and chloride of soda to be good.
21	Dalby Town	Art.	Aug. '02	117.00	1.27	0.18	0.34	0.11	66.62	45.81	..	..	..	..	..	Too much soda to be classed as good.
24A	Eromanga, 2	Art.	Sep. '09	148.3	6.1	1.3	..	..	120.8	14.7	..	..	..	..	..	Calc. sulphate, 2.0; mag. sulph., 0.6; sod. sulph., 2.8; slight sediment. Suit wool-scouring if allowed to settle before use.
35	McKinlay Town	Art.	Aug. '96	42.1	2.00	trace	1.18	trace	26.55	7.86	none	..	0.32	0.00	1.1	Calc. sulphate, 0.95. Mag. sulphate, tr. sod. sulphate, 7.54.
37	Mitchell	Art.	Jun. '08	41.13	0.92	trace	..	..	16.54	15.18	..					
38	Muckadilla (Government) ..	Art.	May, '00	32.85	3.00	0.50	3.30	1.51	15.99	6.90	..	..	..	..	..	Sodium sulphate, 1.55.
38	Muckadilla	Art.	Oct. '09	34.92	2.10	2.42	..	..	23.96	6.44						

43	Normanton	Art.	Nov. '95	276.0	..	..	..	..	159.8	116.2	none	..	1.00	0.01	..	As potable waters undesirable; total Cl. 69.3; faint saline taste. Analysis of second sample by Mr. Hamlet.)
	Ditto	Art.	Dec. '95	275.5	..	..	..	..	160.3	114.19	..	..	1.40	0.05	..	
44	Prairie	Sub.	Oct. '94	58.0	2.24	0.52	3.44	1.74	15.16	34.9	none	..	0.04	0.04	3.50	
46	Roma (Government)	Art.	Aug. '97	73.95	1.83	0.63	2.11	0.97	37.34	23.39	7.17	..	..	..	..	Potassium and sodium sulphates.
46	Roma (Government)	Art.	Oct. '97	50.00	1.60	0.20	0.50	0.30	23.00	15.50	8.90					
46A	Roma, 2 (Water)	Art.	Dec. '00	45.91	2.02	0.28	0.68	0.93	31.18	9.73	..	..	..	..	..	Sodium sulphate, 1.09; water has a strong odour of light mineral oil.
47	Sixty-five Mile (Government)	Art.	Oct. '91	70.12	..	..	..	..	48.72	..	..	5	..	..	..	Vol. susp. matter, 6.6; Pot. chlor., 9.8.
48	St. George	Art.	Dec. '03	72.00	2.38	0.12	0.85	0.19	44.44	22.24						
50	Tambo	Art.	Apr. '11	13.0	1.0	0.2	1.0	1.2	4.2	3.6	..	..	..	..	..	Exceptionally low in saline matter.
51	Tinderry	Art.	Nov. '10	32.0	2.46	0.22	0.85	0.31	20.76	7.42	..	..	..	..	..	Suit domestic, stock, and wool-scouring purposes, not ordinary irrigation.
52	Thargomindah	Art.	Oct. '93	56.0	..	..	..	..	46.78	9.22	none	3.5	0.54	0.04	2.0	Total solids, chlorine and free ammonia high, but safe for domestic purposes; detrimental to vegetation if used constantly. Total Cl. 5.6.
60	Winton (deep)	Art.	Apr. '96	25.0	9.0	0.9	2.7	trace	8.12	4.28	none	..	0.48	trace	..	Contains less chlorine and alkalies than the general run of bore waters. Total Cl. 2.6.
65	Stanwell, Central Railway	Sub.	Jul. '98	33.50	1.00	..	7.00	8.50	..	15.00	..	..	none	..	..	Sodium sulphate, 2.00. Free carbonic acid, 4.40.
66	Maria Creek	Art.	1898	864.50	2.55	1.45	15.20	45.45	576.00	223.85						
109B	Woodmillar	Sub.	?	286.2	..	..	11.5	..	..	219.35	..	20 about	..	..	..	Calc. sulphate, 3.26; calc. chloride, 0.35; mag. chloride, 5.20; alkalies, 11.5. Tot. chlor., 137.2.
110	Nine-mile (Aramac Div. Board)	Art.	Sep. '93	65.0	..	..	..	..	47.70	17.30	none	5.8	0.34	0.03	..	Analysis unreliable; water badly packed. Total Cl. 10.5.
111	Aramac Town	Art.	Jun. '97	21.80	3.00	trace	2.60	trace	10.10	6.10	..	..	..	..	..	Potassium, trace; good water.
112	Ilfracombe	Art.	Jul. '10	85.2	1.90	0·78	2.14	trace	63.8	13.5	..	..	..	..	..	Carb. of soda higher than usual, prevents use for irrigation.
113	Longreach	Art.	Feb. '01	80.81	3.36	0.44	0.97	..	61.40	13.86	..	..	..	..	..	Sodium sulphate, 0.78. Water unsuitable for irrigation purposes.
122	Hughenden Bore, A	Sub.	Apr. '99	29.00	..	..	..	..	..	..	none	18.50	none	none	1.00	Free from organic contamination; very hard, but suitable for domestic use. Total Cl., 5.5.
	Ditto B	Sub.	Apr. '99	28.50	..	..	..	..	..	..	none	19.40	none	none	1.00	
128	Morven Town	Sub.	Oct. '97	17.00	2.40	1.00	0.50	0.30	11.20	1.60	..	..	..	..	..	Best yet examined.
128	Morven Town Bore	Art.	Jul. '00	16.97	1.44	0.64	1.90	2.42	7.89	1.48	..	..	..	..	..	Loss on Ignition, etc., 1.20.
130	Blackall M.C. 2	Art.	Oct. '01	18.63	1.76	0.27	0.20	1.03	9.11	5.11	..	..	..	..	..	Calc. sulphate, 1.15; good, suit domestic and stock purposes.
134	Afton Downs, 2—Afton	Art.	Apr. '97	21.00	1.90	..	4.20	6.00	1.60	5.00	1.40	..	..	..	..	0.90 Pot. carb. Sulphates are of soda; hardness may interfere with some uses; potable, although No. 4 rather saline.
	Ditto 3—Emu Ck.	Art.	Apr. '97	25.50	2.20	..	4.30	7.20	1.30	7.20	1.30	..	..	..	..	2.00
	Ditto 4—Cannonball	Art.	Apr. '97	47.60	2.60	..	1.40	0.60	17.00	11.00	15.00	..	..	..	..	trace
	Ditto 5—North East	Art.	Apr '97	21.50	1.70	..	4.50	7.40	1.90	5.60	0.40	..	..	..	..	trace
134	Alba, Woolscour	Sub.	Oct. '02	38.00	1.61	0.08	..	..	13.04	9.56	..	5.0	..	..	..	Sulphate of calcium, 6.12 g.p.g. Do. magnesium, 1.44. Do. sodium, 4.50.
148	Avondale, 2 Bignall's	Art.	Apr. '00	33.0	3.14	0.80	1.80	1.90	16.29	9.07	..	..	..	..	..	Suitable for wool-scouring, except for the large amount of iron, but sample tested was dirty.
151	Bando, 1—Roto	Art.	Apr. '97	25.90	2.32	0.48	1.06	1.34	15.02	5.60	none	..	..	..	..	Potash carbonate, 0.17 g.p.g.
154	Lakeview, Barcaldine	Art.	Jun. '92	20.0	..	..	..	..	..	..	none	2	..	..	..	Suitable for irrigation; total Cl. 0.6. Nitrates absent.

WATER ANALYSES—*continued.*

Reference to Bore Table and Notes.	Locality of Bore, Spring, or Lagoon.	Source,	Date of Analysis.	GRAINS PER GALLON. Total Solids.	Silica, SiO_2.	Iron, Fe_2O_3 and Alumina.	Calcium Carb.	Magnes. Carb.	Sodium Carb.	Sodium Chloride.	Sulphates.	Hardness.	PARTS PER MILLION. Free Ammonia.	Albuminoid Ammonia.	O. for moist combustion.	Remarks. (Quantities in Grains per Gallon.)
161	Beaudesert, 1—Gidea Ck. ..	Art.	Jul. '96	57.9	1.75	trace	0.96	trace	43.56	11.63	none					
	Ditto 4—Snake Ck. ..	Art	Aug.'96	36.55	1.55	trace	0.65	trace	24.97	7.75	none	..	..	..	..	Better than most bore waters.
	Ditto 6—Rangeview Ck.	Art..	Aug.'96	42.45	1.90	trace	0.51	trace	28.60	8.32	none					
	Ditto 7—Bluey Ck. ..	Art.	Jul. '96	63.10	1.21	trace	1.25	trace	35.86	21.42	none	..	..	..	..	Distinctly saline, but useful for garden.
162	Beechal, Duck Creek	Art.	Oct. '98	28.00	2.75	traces	1.80	0.20	18.13	5.12	none	..	..	..	..	Pot. carb. trace. Suitable for domestic and stock.
	Ditto Quilbone Creek ..	Art.	Oct. '98	27.50	3.50	trace	2.20	0.30	16.00	5.50	none	..	..	..	..	
165	Morven, Bendena St., Nebine-Dulla	Art.	Jul. '09	40.2	1.26	0.38	..	..	24.38	12.70	..	..	..	..	..	1.36 calc. sulphate. 0.4 8 mag. sulphate. Too much sod. carb. for ord. irrigation.
170	Cotswold (Blackall Prop. Wool Co.)	Art.	May, '07	17.50	1.60	trace	1.20	trace	9.30	4.80	..	..	..	..	..	Mag. chloride, trace; calc. sulphate, 0.64. Exceptionally good, suit all purposes.
173	Boatman, 1	Art.	Mar. '95	34.15	1.23	..	0.89	trace	..	11.12	3.16	4.0	0.15	0.02	..	Soft. Suitable for all purposes. (Analysis by Mines Dept., N.S.W.)
	..	..	..	36.0	1.5	0.2	1.1	0.4	26.21	6.59	none	..	0.40	none	..	Total Cl. 4.0.
178	Bowen Downs, 1—Kanaka ..	Art.	Sep. '91	66.36	..	..	note	trace	..	11.69	..	..	0.48	0.06	3.0	Total Cl.—(1) 11.33; (2) 3.18; (3) 3.18. Good for domestic purposes, stock, and irrigation: solid residue chiefly carb. of lime, chloride of soda, small quantity of sulph. of lime, and tr. of mag. Analyses of 1, 2, 3, 4 by Dr. Helms.
	Ditto 2—Grange ..	Art.	Sep. '91	25.76	..	..	note	trace	..	5.26	trace	..	0.14	0.02	1.5	
	Ditto 3—Land's End	Art.	Sep. '91	25.90	..	..	note	trace	..	5.28	trace	..	0.09	0.02	2.0	
	Ditto 4—Muttab. Rd.	Art.	Aug. '92	47.32	..	..	trace	trace	..	12.85	note	..	0.16	0.20	..	Residue chiefly chloride, sulphate, and carb. of soda. Total Cl., 7.77.
180	Brenda, 1	Art.	? 1906	46.20	..	..	..	..	26.60	9.17	..	..	..	..	9.8	Saline residue, 36.40; tr. of sulphates of lime and mag.; should be sparingly used for irrigation. Anal. by F. B. Guthrie.
181	Brighton Dns., 1—McCartney Ck.	Art.	Feb. '96	49.0	3.5	0.8	1.1	0.6	31.63	11.37	none	..	0.78	none	..	Total Cl. 6.9.
	Ditto 2—Macunda Ck	Art.	Feb. '96	38.0	3.4	0.6	1.1	0.2	27.60	5.10	none	..	0.64	none	..	Total Cl. 3.1.
185	Bunda-Bunda, 1—Blackbull ..	Art.	Dec. '96	25.50	1.90	none	0.80	trace	18.50	4.30	trace	..	0.40	..	..	Good for all purposes.
	Ditto 2—Telegraph ..	Art.	Jan. '97	25.00	2.50	none	0.50	trace	17.60	4.40	trace	..	0.80	..	..	
	Ditto 3—Ashe's ..	Art.	Dec. '96	25.50	1.80	trace	0.90	0.30	17.90	4.60	trace	..	0.60	..	..	
	Ditto 4—Station ..	Art.	Jan. '97	26.00	1.80	trace	0.90	trace	19.00	4.30	trace	..	none	..	..	
186	Burenda, 2	Art.	May, '00	28.77	1.60	1.05	0.90	1.90	10.25	9.57	..	..	..	..	..	Sodium sulphate, 2.80.
186	Burenda, 1, Woolshed	Sub.	Jul. '01	41.92	2.10	0.37	0.72	0.37	18.62	16.83	..	..	..	..	..	Sod. sulph., 2.91; suit stock and domestic purposes, doubtful value for irrigation.
	Ditto 2, Burenda	Sub.	Jul. '01	7.22	2.13	0.49	0.86	0.40	0.81	1.81	..	..	..	..	..	Sod. sulphate, 0.72 } Unreliable samples.
	Ditto 3, Gidya Cr. ..	Art.	Jul. '01	5.95	1.54	0.44	0.73	0.34	0.34	1,78	..	..	..	..	..	Sod. sulphate, 0.78
	Ditto 4, Fenian Cr. ..	Art.	Jul. '01	23.54	1.64	0.15	0.56	0.34	12.61	7.09	..	..	..	..	..	Sod. sulphate, 1.15; suit all ordinary purposes, doubtful for irrigation.

186	Burenda, 6	Art.	Mar. '10	1342.4	1.8	13.2	4.1	..	..	1201.2	..	..	..	..	..	Calc. sulphate, 12.9; calc. chloride, 66.5; mag. chloride, 42.7.
	Ditto 10	Bore	Mar. '10	1291.4	0.5	16.9	..	..	..	1150.0	..	...	..	..	..	Calc. sulphate, 26.6; calc. chloride, 58.0; mag. chloride, 39.4. Above samples too salt for ordinary or stock use.
	Ditto 2	Sub.	Mar. '10	561.9	2.7	3.5	..	..	3.8	485.1	..	..	..	..	..	Calc. sulphate, 53.1; mag. sulphate, 9.9; sod. sulphate, 3.8; fair for stock.
186	Burenda (No. ? 6)	?	Jun. '11	6.6	1.3	0.1	0.7	1.7	..	2.0	..	..	..	..	..	Mag. chloride, 0.7. Very small amount of salt.
189	Burranbilla, 1	Art.	Oct. '96	33.90	1.5	trace	0.97	trace	24.62	6.75	none					
192	Caiwarra, 1	Art.	Sep. '96	46.35	2.03	trace	1.30	0.43	25.81	14.91	none					
	Ditto 2	Art.	Sep. '96	35.60	2.77	trace	0.85	0.38	18.42	9.24	none					
195	Cambridge Downs, 4—Ram Ck.	Art.	Feb. '97	23.50	1.90	trace	2.20	1.80	10.60	5.80	1.20	..	..	..	..	Good for domestic purposes; sod. sulphate, 1.20.
	Ditto 7—Flagstone	Art.	Feb. '97	30.50	4.40	trace	1.70	1.20	16.10	5.60	1.00	..	..	..	..	Good for domestic purposes; sod. sulphate, 1.00.
195	Cambridge Downs (No. ?)	Art.	Oct. '05	18.01	2.04	0.50	2.00	2.95	5.03	4.28	..	7.2	..	..	..	Calc. sulphate, 116. Probably corrosion of bore-casing is chiefly caused by carbonic acid.
205	Charleville (C. D. E. Francis)	Art.	Nov. '08	48.8	3.4	0.12	..	..	23.6	15.8	..	..	0.98	0.03	1.1	Calc. sulphate, 0.6; mag. sulphate, trace. sod. sulphate, 5.2; suit stock; not suitable for regular irrigation on account of Na_2CO_3 present.
205	Charleville Meat Works	Art.	Jun. '98	58.00	1.70	..	1.35	trace	25.52	20.60	..	..	1.00	0.02	1.50	Sodium sulphates, 8.83; no susp. matter.
207	Charlotte Plains (Hughenden), 7	Sub.	Apr. '06	44.30	2.20	0.40	13.90	19.40	2.40	5.00	..	..	..	..	..	Sod. sulphate, 1.0. Too hard for steam, rectified by adding lime water to take up the free carbonic acid.
211	Claverton—															
	1—Wyandra (Woolshed ?)	Art.	Apr. '97	36.25	1.80	0.60	1.40	0.50	19.40	12.5	..	..	..	..	..	Good for domestic and stock purposes; doubtful for irrigation.
	2—Burke (Clarke's Lake ?)	Art.	Apr '97	54.00	2.00	0.80	1.60	0.32	36.73	12.55	..	..	..	..	..	
	3—Alicia	Art.	Apr. '97	36.25	2.20	trace	0.90	0.15	23.00	10.00	..	..	..	..	..	Good for domestic and stock purposes; doubtful for irrigation.
225	Offham Bore	Art.	Mar. '99	41.00	2.10	..	1.40	1.00	29.24	7.26	none	..	..	..	..	No nitrates.
237	Kahmoo	Art.	Oct. '96	28.75	2.2	trace	0.75	trace	17.34	8.40	none					
238	Dagworth, Crescent	Art.	Nov. '95	28.6	3.9	0.3	1.9	1.3	17.41	3.79	none	..	0.24	trace	..	Total Cl. 2.3. Good for all purposes. The hot water precipitates stalagmite while cooling.
242	Dalgonally, 1—Fullarton	Art.	Oct. '96	48.05	1.46	0.47	1.64	1.25	23.80	17.80	..	..	..	..	..	Potash carbonate, 0.17.
	Ditto 2—Gilliat	Art.	Oct. '96	29.00	1.46	0.31	1.12	0.87	19.33	5.76	..	..	..	..	..	Potash carbonate, 0.15.
	Ditto 3—Twelve-Mile	Art.	Nov. '96	43.67	2.90	..	1.50	..	15.26	23.76	0.25	..	..	..	..	Mag. sulphate, 0.25; pot. carb. none.
	Ditto 4—Springs	Art.	Nov. '96	26.50	2.80	..	2.10	..	15.40	6.00	0.20	..	..	..	..	Mag. sulphate, 0.20; pot. carb. trace.
245	Darr River Downs, 4	Art.	Dec. '95	53.0	3.2	trace	1.63	trace	36.64	11.53	none	..	0.14	0.10	..	Total Cl. 7.
250	Dillalah, 2 (Loddon)	Art.	Nov. '93	33.8	..	..	..	..	21.45	12.35	none	1.5	9.75	1.0	..	Total Cl. 7.5. Alkaline; contains large quantity of free ammonia; fit for domestic purposes.
	Ditto 3—Hythe	Art.	Apr. '97	109.48	..	..	1.44	trace	20.64	23.40	..	..	..	..	..	Water very muddy; sample of doubtful value. Sulph. hydrogen, .332; Fix. susp. matter, 5.39, vol. 20.67; unfit for domestic or stock purposes.
	Ditto Station, 1	Art.	Jul. '92	73.28	..	..	4.13	..	..	..	trace	4	..	..	..	Soda, 21.07; potash, 19.05; total Cl. 2.7; potable, but not well suited for irrigation.

WATER ANALYSES—*continued.*

Reference to Bore Table and Notes.	Locality of Bore, Spring, or Lagoon.	Source.	Date of Analysis.	GRAINS PER GALLON.								Hardness.	PARTS PER MILLION.			Remarks. (Quantities in Grains per Gallon.)
				Total Solids.	Silica, SiO_2.	Iron, Fe_2O_3 and Alumina.	Calcium Carb.	Magnes. Carb.	Sodium Carb.	Sodium Chlorides.	Sulphates.		Free Ammonia.	Albuminoid Ammonia.	O. for moist combus-tion.	
255	Eddington, 1—Woolshed ..	Art.	Jun. '01	25.13	2.60	0.25	0.58	0.96	14.48	5.11	..	..	..	..	..	Sod. sulphate, 1.15 } Better than average bore waters, suit domestic and stock purposes.
	Ditto 3—Camarooka ..	Art.	ditto	24.64	1.90	0.26	0.49	..	15.62	5.28	..	..	..	..	..	Sod. sulphate, 1.09
	Ditto 4—Horse Creek ..	Art.	ditto	24.86	1.86	0.22	1.08	..	15.00	6.10	..	..	..	..	..	Sod. sulphate, 0.60
	Ditto 7—Gidya Creek ..	Art.	ditto	27.15	1.94	0.33	0.36	0.25	19.01	4.78	..	..	..	..	..	Sod. sulphate, 0.40
	Ditto Alma	Art.	Apr. '99	25.00	1.60	0.30	traces	traces	18.50	4.60	traces	..	..	..	..	Suit all purposes.
258	Elverston	Art.	Jan. '98	45.36	0.36	0.09	1.57	trace	23.39	13.94	2.77	..	..	..	..	Total vol. susp. matter, 3.24. Anal. by G. H. Irvine.
262	Eulolo, 2—Woolscour	Art.	Jul. '96	27.0	2.14	0.37	trace	trace	19.50	4.12	none	..	..	..	..	Used for wool-scouring.
	Ditto 3—Wildduck	Art.	Aug. '96	24.05	1.70	trace	2.94	trace	15.30	3.34	none					
269	Fort Constantine—															
	3A—Elder Creek	Art.	Oct. '96	49.45	1.17	trace	1.01	trace	37.56	8.96	none					
	1—Alice	Art.	Oct. '96	60.35	1.25	trace	1.26	trace	41.93	15.40	none					
	8—Kennedy's Yard ..	Art.	Oct. '96	62.3	1.03	trace	1.10	trace	44.77	14.93	none					
271	Hughenden and Glendower Stn.	Sub.	Dec. '00	281.61	2.41	0.98	45.70	6.86	65.24	..	..	..	6.00	2.40	..	Sulphuric acid, 76.16; pot. and soda chlorides, 52; fix. susp. matter, 255.8; vol. susp. matter, 25.7; carbonic acid not determined; nitric acid, 11.6 part per million. Water quite unfit for domestic purposes, and can only be used with caution for stock.
284	Hamilton Downs, 2	Art.	Oct. '01	26.92	2.66	0.80	3.85	1.76	9.13	7.75	..	..	..	..	..	Calc. sulphate, 0.97; suit domestic and stock purposes.
288	Helidon Spa	Art.	Dec. '94	233.01	0.29	trace	7.35	3.39	212.14	2.99	..	..	..	..	..	Lithium carb. 2.68 [?]; natural ærated mineral water. Anal. by W. A. Dixon.
293	Coolibah Bore—Hughenden ..	Art.	Apr. '99	24.00	1.30	0.20	6.50	8.40	2.70	4.90	none	..	..	..	..	Suit all purposes.
297	Inverleigh, 1, "Poingdestre" ..	Art.	Aug. '08	139.0	..	..	..	..	..	..	..	..	..	..	..	Loss on ignition, 15.5. Traces of lime and magnesia. Chlorine, 32.3. Equivalent of salt, 53; tot. susp. matter, 85.8.
305	Kilcummin Station	Sub.	Sep. '00	1,245.00	4.90	2.50	55.20	..	..	651.90	..	..	..	..	..	Mag. sulphate, 7.8; mag. chloride, 285.7; Calc. chloride, 237.0.
306	Kynuna, 2—Bellkate	Art.	Jul. '96	26.45	2.16	trace	2.22	trace	16.19	5.11	none	..	..	..	..	Deposits iron oxide while cooling.
316	Llanrheidol, 1	Art.	Jan. '96	30.0	4.3	1.1	2.5	trace	15.07	6.93	none	..	0.08	none	..	Used for wool-scouring. Total Cl. 3.6.
318	Longreach, Dahra Farm ..	Sub.	Oct. '09	375.04	0.98	0.44	..	..	13.25	306.11	..	..	..	..	..	Mag. sulphate, 17.34; calc. sulph., 21.76; sod. sulph., 15.16. Rather saline for stock, but cattle may get used to it.

319	Lucknow	Art.	Feb. '96	32.0	3.5	0.6	1.2	trace	19.95	6.75	none	..	0.42	none	..	Total Cl. 4.1.
324	Manfred Downs—															
	2B—The Springs	Art.	Dec. '96	42.6	0.58	trace	1.11	trace	20.53	19.95	none					
	1—Windmill	Art.	Nov. '96	23.8	1.36	trace	1 98	trace	13.54	6.44	none	..	..	..	..	Suitable for domestic purposes, stock, and irrigation.
	11—Pennsylvania	Art.	Dec. '96	25.8	1.48	trace	0.74	trace	17.04	6.59	none	..	..	..	..	
	8B—Lara	Art.	Dec. '96	22.9	0.45	trace	0.56	trace	15.85	6.04	none	..	..	..	..	
	15—Katnook	Art.	Nov. '96	23.2	0.68	0.36	2.27	..	14.05	5.81	none	..	..	..	..	Better than most bore waters. May be used for domestic purposes, stock, and irrigation. All show traces of potash, but no sulphates.
	12—Binnum	Art.	..	22.65	1.08	trace	3.17	..	12.59	5.81	none	..	..	..	..	
	3—Stud Paddock	Art.	Nov. '96	24.6	1.55	trace	1.35	..	15.43	6.27	none	..	..	..	..	
	7—Boonooke	Art.	Nov. '96	27.5	1.70	trace	1.16	..	19.09	5.50	none	..	..	..	..	
330	Maranoa Downs	Art.	Feb. '10	71.9	1.92	0.30	..	..	18.31	28.18	..	..	..	..	..	Calc. sulphate, 2.91; mag. sulphate, 0.15; sod. sulphate, 20.17; more sulphates than usually found.
337	Millungera—Bowwater ..	Art.	Dec. '96	26.00	2.85	..	1.40	..	15.40	4.95	0.50	..	..	..	..	Magnesium sulphate, 0.50; good.
347	Mount Cornish, Dotswood ..	Art.	Oct. '93	23.9	..	..	..	..	20.44	3.46	none	2.5	0.08	none	..	Good for wool-scouring; bad for irrigation. Total Cl. 2.1.
351	Mount Morris	Art.	Oct. '01	81·05	3.36	0·51	..	0·45	46·34	20·70	..	nil	..	..	..	Calc. sulphate, 0.99; sod. sulphate, 8.70; suit domestic use, and probably wool-scouring; likely to prime in boilers.
356	Murweh—															
	1—Pericoota	Art.	May, '97	47.00	1.60	0.40	1.40	0.80	23.00	15.20	4.60	..	..	..	..	Good for domestic and stock purposes; doubtful for irrigation.
	2—Toorumbury (Boileau ?)	Art.	May, '97	61.50	2.70	0.60	1.10	0.50	29.70	21.10	5.80	..	..	..	..	
	3—Warrego (Woolscour) ..	Art.	May, '97	59.50	3.60	1.20	2.80	trace	31.10	20.80	trace	..	..	..	..	
	4—Neville Forest	Art.	Apr. '97	55.00	2.20	0.90	1.40	0.50	34.50	15.50	trace	..	..	..	..	
358	Ambo	Art.	Jun. '99	142.00	1.30	0.80	1.60	1.00	89.4	45.9	..	..	..	..	..	Organic matter, &c., 2.00.
361	Yandarlo (No. ?), Augathella..	Sub.	Apr. '11	255.6	1.40	0.42	9.30	..	..	185.2	..	..	..	..	..	Calc. sulphate, 22.11; calc. chloride, 19.24; mag. chloride, 9.21. Very saline and hard; unsuitable for irrigation and domestic use.
369	Oakwood Station, Charleville..	Art.	Apr. '11	399.54	1.58	0.42	7.80	..	..	363.0	..	..	..	..	..	Calc. chloride, 21.40; mag. chloride, 5.34. Too saline and hard for irrigation and domestic use; doubtful for stock.
375	Quambeytook	Art.	Aug. '96	25.6	1.52	trace	3.24	1.41	10.60	7.75	none					
376	Redcliffe, Hughenden	Sub.	Apr. '97	19.00	2.80	trace	4.40	4.50	0.80	5.30	1.2	..	..	..	..	Hard, but good.
381	Rocklands, Camooweal, 1 ..	Sub.	Mar. '97	42.01	3.89	0.79	†5.84	†5.30	†7.35	..	†3.17	..	..	..	..	0.34 Pot. ash 6.33 Carb. acid 9.0 Tot. Ch. †Bases and acids separated.
	Ditto ditto 2 ..	Sub.	Mar. '97	48.53	2.18	0.39	†5.71	†6.37	†9.69	..	†8.87	..	..	..	..	0.33 2.59 12.4
	Avon Downs, ditto 2 ..	Sub.	Mar. '97	75.70	6.04	0.92	†7.15	†7.73	†17.12	..	†10.63	..	..	..	..	0.65 2.46 23.0
385	Roma Town	Art.	Aug. '01	37.83	1.82	0.18	0.38	0.14	26.07	6.93	..	..	..	..	..	Sod. sulphate, 2.31; suit domestic and stock purposes; doubtful for irrigation.
391	Saxby, 1—Central	Art.	Jan. '97	25.70	2.00	1.00	1.60	1.60	10.63	6.93	..	..	..	..	..	Potassium carb., trace; good water.
	Ditto 2—Mill Mill	Art.	Jan. '97	25.08	2.50	trace	trace	trace	16.38	4.62	..	..	..	..	..	

WATER ANALYSES—*continued.*

Reference to Bore Table and Notes.	Locality of Bore, Spring, or Lagoon.	Source.	Date of Analysis.	Grains per Gallon.								Hardness.	Parts per Million.			Remarks. (Quantities in Grains per Gallon.)
				Total Solids.	Silica, SiO_2.	Iron, Fe_2O_3 and Alumina.	Calcium Carb.	Magnes. Carb.	Sodium Carb.	Sodium Chlorides.	Sulphates.		Free Ammonia.	Albuminoid Ammonia.	O. for moist combustion.	
410	Telemon, 1—Woolshed ..	Art.	Mar. '97	32.00	1.45	2.80	1.40	1.06	14.00	8.75	2.01					
	Ditto 2—Whitewood ..	Art.	Mar. '97	33.50	1.60	trace	3.15	3.18	13.77	9.08	2.01	..	..	..	..	Casing very badly corroded.
	Ditto 3—Telemon	Art.	Feb. '97	22.50	1.20	1.40	4.45	6.43	2.74	5.78	trace					
	Sylvania, 2—Annandale ..	Art.	Apr. '97	25.30	1.60	..	6.40	8.40	3.00	5.90	trace	..	..	..	..	Hard, but good, except for steaming.
	Telemon, 4—Sawpit	Art.	Mar. '97	21.00	1.50	0.60	4.00	6.90	2.60	5.40	..	..	..	..	..	
413	Thurulgoona Station, near Mungindi	Art.	Jun. '11	131.2	5.6	0.6	1.8	1.9	21.7	9.6	..	..	..	..	..	Unsuitable for irrigation, owing to sod. carb. Susp. matter, 85.8.
416	Tinnenburra, 1—Kungie ..	Art.	Aug. '96	35.65	2.20	trace	1.08	..	21.15	8.57	none	..	..	..	..	30 g.p.g. of soda carb., probably prejudicial to vegetation.
	Ditto 2—Petitie ..	Art.	Aug. '96	28.5	1.17	trace	trace	..	17.12	8.24	none	..	..	..	..	
	Ditto 3—Mulgar ..	Art.	Aug. '96	37.75	1.37	trace	0.91	..	23.12	8.57	none	..	..	..	..	
	Ditto 4—Mulgar, 9 ..	Art.	Aug. '96	39.25	2.05	trace	0.77	trace	28.10	8.07	none	..	..	..	..	
	Ditto 5—Mulgar, 11 ..	Art.	Aug. '96	38.75	1.43	trace	0.91	0.26	23.10	9.72	none	..	..	..	..	
	Ditto 7—Boorka ..	Art.	Aug. '96	34.5	1.36	trace	1.03	0.12	19.89	9.06	none	..	..	..	..	
	Ditto 8—Tuen.. ..	Art.	Jul. '96	33.75	1.88	trace	0.49	0.31	19.68	9.55	none	..	..	..	..	
	Ditto 9—Tinnenburra, 1	Art.	Aug. '96	33.35	1.78	trace	0.73	trace	17.58	9.88	none	..	..	..	..	
419	Toolebuc, 5	Art.	Jun. '96	52.95	1.38	trace	1.20	trace	36.00	14.20	none	..	..	..	..	Sulphate dressing advantageous with these waters.
420	Toorak, 1—Wild Duck.. ..	Art.	Nov. '92	29.00	..	..	some	some	some	some	some	..	trace	..	..	Alkaline; tot. fix. susp. matter, 25; tot. vol. susp. matter, 4; tot. ch., 4.1. Anal. by C. R. Blackett.
431	Warbreccan	Art.	Jun. '01	150.00	..	..	..	..	..	20.00	..	..	..	..	..	Strong odour of sulph. hydrogen.
432	Warenda, 13—Gidhya	Art.	Jun. '96	46.25	1.27	trace	0.81	trace	34.33	9.06	none	..	..	..	..	Sulphate dressing advantageous with these waters.
	Ditto 19—Warra	Art.	May '96	36.0	1.8	0.3	0.6	0.3	26.25	6.75	none	..	0.32	0.01	..	Total Cl. 4.1.
	Ditto 6—Bunda	Art.	May '96	36.6	5.0	0.7	0.4	0.5	23.08	6.92	none	..	0.80	trace	..	Total Cl. 4.2.
	Ditto 2—Palparara ..	Art.	Apr. '96	39.0	1.5	0.2	0.6	0.2	29.09	7.41	none	..	0.72	trace	..	Total Cl. 4.5.
	Ditto Station (No. ?)..	Art.	Mar. '07	73.33	1.80	0.22	..	..	28.3	23.76	..	..	..	..	..	Calc. sulphate, 7.89; mag. sulphate, 10.11; sod. sulphate, 1.25.
439	Westland Station, 2	Art.	Nov. '92	98.0	..	..	3.0	..	62.61	..	..	3	..	..	..	Pot. sulphate, 17.16; pot. chlor., 15.23; H_2S, 2.04; vol. susp. matter, .7; only suitable for medicinal or wool-scouring purposes.
445	Woolerina, Kulki	Art.	Jan. '99	206.00	..	..	..	..	57.60	..	..	..	4.90	2.50	39.00	Unfit for human consumption. Vol. susp. matter, 30; total Cl., 17.
454	Rockhampton— Yeppen Lagoon	W.H.	Jun. '02	55.50	..	..	..	..	..	..	..	21.0	0.88	0.39	8.5	Not suitable for domestic use; pot. chloride, 20.3.

455	Dunganweate Lagoon	W.H.	Jul. '02	93.10	..	..	..	..	..	..	..	38.5	0.82	0.40	11.5	Not suitable for drinking; pot. chlor., 33.5.
456	Crescent Lagoon	W.H.	Jul. '02	77.90	..	..	..	..	..	..	..	31.5	0.84	0.62	19.8	Not suitable for drinking ; pot. chlor., 28.
457	Dunganweate Well	Well	Jul. '02	66.00	..	..	..	..	..	..	..	31.5	0.31	0.02	1.7	Uncertain as to sewage contamination. Pot. chlor., 22.5 ; nitrates, .25.
458	Ditto Lagoon ..	..	Jul, '02	96.90	..	..	..	..	..	..	..	38.5	0.73	0.02	4.5	Driftwater ; not fit for drinking purposes. Pot. chlor., 32.
459	Crescent Lagoon, 1	W.H.	Mar. '04	..	..	..	..	..	..	..	..	5.0	0.13	0.35	11.5	Contains organic matter, not suitable for town supply. Pot. and soda chlor., 2.3.
460	Ditto 2	W.H.	Mar. '04	..	..	..	..	..	..	..	..	5.0	0.13	0.35	11.5	
461	Dunganweate Lagoon	W.H.	Apr. '07	93.81	2.95	2.36	8.30	..	11.34	34.90	..	56.0	0.58	0.05	*3.3	* Milligrams per litre ; calc. sulphate, 12.75 ; mag. chloride, 21.21 ; fix. susp. matter, 2.6 ; not suitable for domestic purposes.
462	Ditto	Spg.	Sep. '07	89.55	2.80	6.09	..	10.77	5.08	56.60	..	..	0.054	0.108	*2.7	* Milligrams per litre ; calc. sulph., 7.48 ; sod. sulph., 0.73 ; unsuitable for domestic use and steam.
463	Clermont Lagoon	W.H.	May, '02	8.00	..	..	..	..	..	..	..	4.0	0.76	0.52	15.0	Unfit for human consumption. Pot. and soda chlor., 1.2.
464	Crescent Lagoon	Lag.	Sep. '07	56.81	1.83	4.38	..	9.66	..	33.90	..	..	.02	.20	6.20	Mag. chloride, 1.14 ; sod. sulphate, 2.79 ; calc. sulphate, 3.11. Signs of vegetable contamination. Too hard for domestic use or steam ; contains large amount of iron.
465	Oakvale Springs, Herberton ..	Spg.	1895	104.80	6.57	0.53	25.95	3.97	54.10	11·37	..	..	..	..	..	Pot. sulphate, 1.01 Pot. chloride, 1.12 } Lithia, trace.
466	Innot Hot Springs, Herberton	Spg.	1896	46.80	7.90	0.40	1.86	1.70	15.34	19.60	..	..	2.28		..	Lithia trace } Temp. 158° to 168° F.
467	Ditto ditto	Spg.	1900	41.60	7.20	0.80	2.60	..	8.60	19.10	3.30	..	..	..	..	

NOTES ON ARTESIAN BORES.

(Referred to in table of Artesian Bores, page 21.)

See also Bore Notes in "Geology of Queensland," pp. 418, &c.

Note.—Pressure values are given in pounds per square inch; g. p. d. refers to gallons per day.

4. Bando. (*See* Rep., 1898.) Measured flow after completion, Jan., 1898, 2,900,000 g. p. d. Inspected March, 1898, flow then 2,061,900 g. p. d. from an outlet 12 feet above surface, with a leakage outside of casing amounting to 14,250 g. p. d.; pressure, 91.5 to 99 lb.; temp. 119° F. Last inspected Jan., 1911; outlet then 7 feet above surface; leakage outside of casing 21,900 g. p. d., which did not increase during static test of 4½ hours; borehead badly corroded and leaking at the rate of 5,100 g. p. d. during static test; no gas.

5. Barcaldine Rail. Stn.—Yield in Dec., 1887, 175,000 g. p. d.; temp., 102° F.; static head, 40 feet; measured, Oct., 1899.

6. Bedourie (1)—Met with drift sand.

8. Middle Park.—A flow of 1,397,580 g. p. d. was measured 2 hours after a static test of 46 hours; March, 1911.

9. Racecourse—Former flow, 8,228 g. p. d.; contains small quantites of carb. hydrogen; unfit for domestic purposes; collapsed. *Coal* about 5 feet thick at 791 feet. *See* G.S.Q.P. Nos. 108, p. 5 (1896), and 225, pp. 32-3 (1910).

10. Brixton—Formerly called Saltern Bore; still known as the "Twenty-Mile." Flow in 1898, 17,200 g. p. d.; static head, 87 feet; inspected 30th Sep., 1899.

14. Charleville—Town reticulated, June, 1896; inspected, Nov., 1898; part of flow from a 3-inch outlet about 2,000,000 g. p. d.; former static head, 230 feet; temp., 106° F.

18. Cunnamulla—Town reticulated in April, 1896. Deepened in 1901; former depth, 1,300 feet; temp., 106° F.; flow, 540,000 g. p. d., pressure 185 lb. Measured flow after deepening, 2,023,000 g.p.d.; temp., 111° F.; outlet at 11.5 above ground. Inspected April, 1911; static test of 1 hour 50 minutes; about 50,000 g. p. d. are passing through a valve to waste; static pressure generally ranges between 60 and 80 lb.

20. Maida Hill—(1) A well to 85 feet, water rose 31 feet in well. (5, 6) A well to 53 feet at each bore.

24. Eromanga—(1) *Inflammable gas*, blue flame; water saline and gaseous. (2) Water good but has a gaseous taste. *See* section No. 224.

27. Hungerford—(1) Salt water at 22 feet; granite at 285. (2) Granite at 489 feet.

28. Jericho—Supplied 3,600 g. p. d. for local use.

29. Jondowaie—4. A well to 102 feet.

31. Laidley—Water unfit for domestic purposes 5 ft. coal seam at 1,700 ft. *See also note under* Coal Bores.

32. Logie Plains—Water suits stock; bores silted up, Sep., 1910.

35. McKinlay—Water struck, Sep., 1890; outlet lowered 10 feet in Aug., 1896, with increased flow of about 30,000 g. p. d.

36. Middleton—Ten distinct water beds; flow increased considerably after completion of bore.

37. Mitchell—Four sub-artesian supplies; eleven distinct flows observed at various depths; first flow at 560 feet; bands of *coal* at 930 feet.

38. Muckadilla—Completed to 3,262 feet in Nov., 1890; deepened to 3,762 feet in 1898, but no increase of flow; bottomed on primary rocks.

43. Normanton—Contains the *largest proportion of solids* when compared with bores having good flows; distinctly saline; largely used for domestic and stock purposes. Flow said to have diminished.

45. North Rockhampton—Strata unpromising.

46. Roma—Town water supply direct from Nos. 1 and 2 bores (1902). (1) Great loss of water outside casing; flow, when first tapped, 185,200 g. p. d. (2) Small flow of brackish water at 757 feet; supplies tapped, 64,400 g. p. d.; at 928 feet, 25,050 g.; at 1,046 feet, 29,700 g.; at 1,290 feet, 67,300 g.; at 1,358 feet, and a very slight supply at 2,965 feet. Good *illuminating gas* between 3,683 and 3,709 feet, yielding about 44,625 cubic feet per diem in Feb., 1901, increasing to 72,264 cubic feet per diem up to Feb., 1904; works for lighting town completed at the beginning of June, 1906; gas supply from bore ceased flowing 15th June, 1906. Eight seams of *coal* from 3 inches up to about 2 feet thick were passed between 1,992 and 2,409 feet. *See* Gov. Min. Jour., Jan., 1905, p. 17; Nov., 1908, p. 591; A.R.D.M., 1908, p. 173.

48. St. George—Before the 5-inch perforated casing was inserted, the flow measured 613,000 g. p. d. Town reticulated in 1907.

50. Tambo—Originally sunk to 1,002 feet; est. flow, 200,000 g. p. d. Inspected June, 1898; flow then 54,700 g. p. d.; static pressure 17 lb., temp. 94° F.; two-thirds of water flowing between the 10 and 6 inch casings. Flow in June, 1901, 45,000 g. p.d.; deepened in 1902; flow then (Sep., 1902), 1,055,400 g. p.d.; pressure 34 lb., temp. 120° F. Measured in July, 1911, *see* table for data.

51. Tinderry—Static test of 72 hours, Nov., 1910.

52. Thargomindah—Town reticulated in July, 1895. *See* Ann. Rep. Hyd. Eng., 1898.

55. Westbrook—A well to 60 feet; no further supply.

56. Thomson Watershed—Former flow, 20,000 g. p. d.; temp. 161° F. While flushing a considerable quantity of gas escaped, and some solid light-brown drops of petroleum wax were seen floating on the water (Aug., 1899). Outlet, 11 feet above surface.

59. Windorah—Very small quantity of brackish water at 105 feet, unfit for domestic use; no other supply.

60. Winton—Town reticulated in 1899.

62. Water brackish or salt.

63. Warreah—Sunk by diamond drill for *coal*. *See* G.S.Q.P. Nos. 44, p. 1 (1888); 49, p. 1 (1889); 108, p. 56 (1889); 121, p. 6 (1896).

64. Flows into a well below surface.

65. Stanwell—Sunk for coal; some of the water escaping through sands of creek bed. *See* G.S.Q.P. No. 143, pp. 10-12 (1899).

66. Maria Cr.—Sunk by Calyx drill for coal; has an intermittent flow which is probably produced by *pneumo-dynamic or gas pressure*, not by hydrostatic pressure. *See* G.S.Q.P. Nos. 155, pp. 17, 18 (1901); 159, p. 19 (1901).

70. Back Cr.—(1) Stopped flowing in about 1895; flow in 1887, 72,000 g. p. d.; static head, 11 feet; bore 2 in. diam.

73. Dalby Cattle Yard—Diamond drill bore for coal. *See* G.S.Q.P. No. 143, p. 20 (1899).

74. Mitchell—Flows into a well at 20 feet below surface.

83. Barmoya—(2) Orig. supply, 5,000 g. p. d.; became dry.

84. Bell (deep bore)—Salt water at 236 feet; brackish water at 735 feet; hard rock at 878 feet; finished in granite.

87. Brigalow—A well to 100 feet, bored 210 feet.

88. Burncluith—(1) Water contains 500 g. p. d. of saline matter. (2) Too saline for stock. (3) Abandoned in soft pipe clay; a small soak at 343 feet.

92. Mac's Gully—A well to 100 feet, bored 50 feet.

108. Wondalli Estate—(1) A well to 100 feet. (5) Granite at 356 feet. (6) Bottomed in hard rock. (8) Bottomed in sand drift.

110. Nine-Mile—Flow and pressure falling off; depth reported, 943 feet; flow, 56,000 g. p. d. in 1907.

111. Aramac—Town reticulated in Dec., 1897.

112. Ilfracombe—Great leakage between 6 in. and 8 in. casing; pressure taken, Sep., 1899.

113. Longreach—Former flow, 230,000 g. p. d. Again measured in Nov., 1900. Reticulation of town, 1903. Static pressure reported in 1907, 92½ lb.

114. Muttaburra—1st supply at 1,740 feet. 2nd supply at 2,480 feet. About 250,000 g. p. d. cased off. 3rd supply at 2,700 feet. Flow before bore being cased to bottom, 1,100,000 g. p. d. Reticulation of town, Oct., 1905.

115. Barcaldine Town—Town reticulated, 1895; pressure greatly fallen off. Flow could not conveniently be measured (Nov., 1899). Ash Street bore deepened from 1,320 feet.

117 to 120. Dalby District—Sub-artesian wells, sunk before 1898. *See* G.S.Q. Pub., No. 143, p. 20 (1899).

Mount Halley—(1) Formation, mostly blue rock. (2) Formation, sandstone.

121. Wowra—Torren's Cr. road; 20-ft. well.

122. Hughenden—(1) Bore water occasionally pumped to Sep., 1904; not utilised after that date. (2) Reticulation of the town, Sep., 1904.

123. Richmond—Town reticulated in 1904.

125. Yalleroi—Orig. flow, 65,000 g. p. d.; bore is said to have ceased after the completion of Castleroi No. 2 bore. Inspected July, 1911. W.L. then 8 feet below surface. Bore now used to supply water to locomotives.

126. Thornleigh—Inspected Oct., 1902.

128. Morven—Bottomed on primary rocks; *bore water one of the best analysed.*

130. Blackall—2nd supply at 2,084 feet; reticulation of town, Feb., 1905; water passes through a cooling coil.

132. Aberfoyle Run—(A) Eight sub-artesian supplies struck above the artesian bed; fills a lagoon; flowing at the rate of 5,000 g. p. d. below surface level. (B) Well sunk to 81½ feet. (C) First supply at 80 feet was artesian; casing corroded. (D) Five separate supplies. (E) Fills troughing below surface level; flows at 4,320 g. p. d.

133. Adavale—*See* G.S.Q.P. No. 103, p. 15 (1894).

134. Afton Downs—(1) Orig. depth, 1,497 feet, June, 1892; first supply at 1,215 feet. Deepened to increase flow, July, 1892; second supply at 1,560 feet; flow in April, 1897, 184,400 g. p. d.; head, 20 feet. (2) Orig. depth, 844 feet, July, 1892; first supply at 672 feet. Deepened; second supply at 1,013 feet; flow in April, 1897, 999,640 g. p. d.; head, 32 feet; H.P., 2.05. (3) Three supplies. No signs of deterioration after six years. (4) Flow in April, 1897, 529,660 g. p. d.; head, 30 feet. (5) Flow diminished from 66,000 to 20,000 g. p. d., April, 1897; ceased flowing, June, 1900. (6, 7) Flow gradually diminishing, 27-5-02.

135. Albilbah—(1 and 2) Water brackish. (3) Very small supply.

137. Alice Downs—(1) Probable flow at surface, 430,000 g. p. d.; present outlet, 12 feet above surface. (2) Seven distinct flows. These were indicated by outbursts of cloudy gas; bottom in hard rock.

139. Angellala—Two small sub-artesian supplies between 600 and 700 feet; soft sandstone below 30 feet.

140. Arabella—Quality of water similar to that of Charleville Meat Works Bore. Ceased flowing before Aug., 1909; former flow, Nov., 1898, 111,300 g. p. d.; static head, 17 feet.

141. Aramac—*See* Pressure Notes in Ann. Rep. Hyd. Eng., 1898.

2. and 6. cleaned and recased, 1897.

143. On Stainburn Resump.—Both bores cleaned and recased, March, 1896.

144. Ardoch—(1) Flow at 1,030 feet, 3,000 g. p. d.; at 1,970 feet, 15,000 g. p. d.; at 2,284 feet, 500,000 g. p. d.; at 2,323 feet, 1,000,000 g. p. d.; at 2,604 feet, 2,000,000 g. p. d.

145. Arrabury—Great rush of water when supply tapped.

146. Authoringa—(2) Former W.L. 60 feet below surface. (3) Bottomed in 60 feet of very hard rock (granite?) Colombo—Small flows at 1,100 feet and 1,500 feet; leakage outside of casing, when valve is closed, amounts to 124,000 g.p.d.; outlet, 4 feet above surface; inspected Nov., 1910.

148. Avondale—(2) Water said to be running through paddocks in delver-made drains for 60 miles.

149. Ayrshire Downs—(1) Former est. flow, 500,000 g. p. d.; flow given in table measured approx., 6th Feb., 1911; large amount of mineral deposited in bore drain. (2) Flow in table est. Feb., 1911. (3) Flow in table est. Feb., 1911. The casings of bores 1, 2, and 3 are coated inside with a hard, bright, shining metallic deposit.

151. Bando—

(1) Said to have 35 miles of bore drains. First inspected April, 1897; flow then 2,100,400 g. p. d.; bore is said to be cased with 10, 8, and 6-inch casing; water flowing 4.75 feet over 6-inch casing; temp., 130° F. Second inspection Dec., 1910, *see* table for data; outlet, 8 feet above surface; 6-inch casing only visible, which is in excellent condition; about 200,000 g. p. d. are escaping outside of 6-inch casing; no gas.

(2) Said to have 24 miles of bore drains; former est. flow, 2,000,000 g. p. d. Inspected Dec., 1910, *see* table for data; outlet, 4 feet above surface; flowing 10.75 inches over 6-inch casing; no gas nor leakage perceptible outside casing during static test of 1½ hours; free flow is fluctuating.

(3) Inspected Dec., 1910, *see* table for data; bore partially closed; outlet, 9 feet above surface; a flow of 53,400 g. p. d., with a temp. 119.5° F., is issuing outside the 6-inch casing, and is stated to come from 800-feet; this flow did not alter during the static test; bore was closed several times for some hours; practically no gas.

152. Boolburra—Orig. est. flow, 2,000,000 g. p. d. Inspected Jan., 1911, *see* table for data; outlet, 4.5 feet above surface; static test of 75 minutes; 6-inch casing, rusted in patches.

Wallen—Orig. est. flow, 2,000,000 g. p. d. Inspected Jan., 1911, *see* table for data; outlet, 5.75 feet above surface; cased with 6-inch casing to 1,400 feet (level of first water struck); no water tapped for several hundred feet from bottom; the bore was once closed down for a few hours, and when reopened the free flow had diminished from 26 to 16 inches; 24 miles of bore drains.

Glendilla—Est. flow after completion, 1,040,000 g. p. d. Inspected May, 1911, *see* table for data; no flow struck until a few hundred feet from bottom; static test of 63 minutes.

153. Barcaldine Downs—(1) Orig. depth, June, 1894, 2,500 feet.

154. Brackhill—First supply cased off unsuitable for irrigation; former static head, 69 feet; flow measured under a head of about 8 feet (Oct., 1899); reported depth in 1907, 1,400 feet; pressure, 10 lb.

Halfmoon—Formerly flowing 2 inches over 6-inch casing. Simultaneously with Saltern Cr. No. 7 Bore, this bore ceased to flow when second flow of Saltern Cr. No. 10 had been tapped (Oct., 1899). W.L. at that date, 5 feet below surface.

Fairview (2)—Flow at 2,024 feet, about 100,000 g. p. d.; at 2,510 feet, 400,000 g. p. d.

Lochingar—No further supply was met with after 750 feet, bore bottomed in red marl.

155. McLachlan's—Flow diminishing former head, 72 feet; temp., 115° F.; reported depth in 1907, 2,500 feet; pressure, 10 lb.

Co-operative—Former flow, 600,000 g. p. d.

Jacondool—(1) Flow and pressure diminished. Bore deepened some years after 1900; depth in 1895, 1,016 feet; reputed flow at that date, 500,000 g. p. d.; temp., 106° F.

Dunraven—Temp. unchanged; flow diminished from 246,000 to 223,600 g. p. d. in 15 months, nearly 8 per cent.; head fell about 9 feet; about 15 miles of drains are now continuously watered from this bore (Nov., 1899).

Westbourne—In March, 1893, flow stated to have been 800,000 g. p. d.; pressure, 40 lb.; temp., 120° F. (Nov., 1899). Reported static pressure in 1907, 10 lb.

156. Patrick—Former est. flow, 300,000 g. p. d.; sudden decrease attributed to bridging in bore. Reported static pressure in 1907, 31 lb.

Clover Hills—Flow measured 5 feet 6 inches above surface (Oct., 1899).

157. Barclay Downs—(6) Supplies at 259 and 269 feet; W.L. at 274 feet. (7) Supplies at 360 and 395 feet; W.L. at 400 feet. (8) Supplies at 191 and 235 feet; W.L. at 196 feet. (9) Supplies at 150 and 205 feet; W.L. at 173 feet.

Strata pierced is chiefly limestone and flint (?); all the bores are sunk to bed rock, and yield abundant supplies; the quantities given in 4 and 9 are only those delivered by pump.

159. Barenya—(2) In 1894 the depth was 2,290 feet, and the est. flow, 200,000 g. p. d.; static head, about 22 feet; supply gradually decreased until it stopped in 1903; bore deepened to 2,800 feet in 1906, giving a flow of 2,500 g. p. d.

(3) Former flow, 800,000 g. p. d.; decrease of 200,000 g. p. d. within ten years.

161. Beaudesert, &c.—(A) Very salt water at 99 and 187 feet.

(C) Very hard rock; 4-inch casing left in.

(E) In river bed, near No. 8; dry.

(G) In granite.

(H) No water from bore; flow exudes from outcrop of artesian strata against primary rock.

(1) Pressure appears to be greatest at midday.

(3) Plugged below 200 feet; sub-art. bore converted to artesian by outlet to creek.

(5) Flow in 1896, 3,935 g. p. d.; static head of 25 feet; ceased flowing in 1902.

(8) The large supply rises initially to about 70 feet below surface.

(15) Granite at 135 feet.

162. Beechal (1 and 2)—Stopped in very compact sandstone.

167. Bimerah—

(1) The site is elevated; water between 4,130 and 4,220 feet; small flow.

(2) Small quantity of petroleum at 3.640 feet, and bands of *coal* at 3,700 feet; bottom in soft, white sandstone; no increase in flow.

(3) 3,900 feet of 6-inch casing; water highly mineralised.

168. Bindebango—First supply at 1,220 feet, second at 1,600 feet, third at 2,300 feet.

Binda—Granite at 1,550 feet.

169. Bingera—Water struck in blue-coloured shaly sand in all these bores; (3) met with very hard strata above the water-bed; (4) met loose boulders. Flows of these bores were not affected by the drought (1901).

Tarko—Granite bottom.

173. Boatman and Elmina—(1) 43 miles of bore drains; (2) 45 miles; (3) 58 miles; and (4) 27 miles.

174. Bogunda—(1) Water a little brackish; pumped from 140 feet. (2) Water pumped from 80 feet.

175. Bon Accord—(1, 2, and 3) Wells, good supplies. (4) Well, 150 feet deep; bored 30 feet; water rose 74 feet in 20 minutes. (6) Well; unlimited supply; an underground stream. (7, 8) Well; unlimited supply. (9) 8-inch bore. (10) Well; unlimited supply. (11) Well; 130 feet deep; bored 10 feet; water rose 18 feet in 1 hour. (12) Well; unlimited supply. (13) Well, 110 feet; bored 6 feet; water rose 73 feet in 30 minutes. *See* G.S.Q.P. No. 155 (1898).

176. Bonus Downs—Bore in slate.

177. Boorara—(1) Ceased flowing; former flow, 9,000 g. p. d. (11-6-01). (2) Former flow, 90,000 g. p. d. (11-6-01), flow reported 96,000 g. p. d. in 1907. (3) Flow has not diminished (11-6-01); flow reported 10,000 g. p. d., and depth 180 feet in 1907. (5 and 6) In Granite.

178. Bowen Downs—(3) Flow est. at 130,000 g. p. d. in 1907. (4) Orig. depth, May, 1892, 2,251 feet; flow suddenly stopped in 1893; no further supply when bore deepened; W.L. 5 feet below surface in 1907. (6) Flow est. at 80,000 g. p. d. in 1907. (7) Flow reported in 1907, 180,000 g. p. d. (8) Bore deepened; orig. depth, 2,425 feet (July, 1897). Flow est. at 200,000 g. p. d. in 1907.

180. Brenda—Dribble at 743 feet; just flowing at 1,340 feet; at 1,656 feet, flow 20,000 g. p. d.; at 1,885 feet, about 100,000 g. p. d.; and at full depth, about 2,500,000 g. p. d.

182. Lindum—Sunk for *coal* by Calyx drill. *See* G.S.Q.P. No. 143, p. 8, (1899).

185. Bunda Bunda—(7) First flow at 890 feet. The bore casing in Nos. 3, 6, and 7 bores is badly corroded.

186. Burenda—Highest potentials noted in Queensland.

(2) Bore cleaned and recased with 5-inch casing; flow recovered; originally the bore had a flow of 500,000 g. p. d., with a static head of 90 feet; bore now pumped from 36 feet below surface (1907). Bore water corrodes casing. (3) Doubtful if any more water below 2,600 feet was met with. Flow reported to be 36,000 g. p. d. in 1907. Bore twice recased on account of corrosion by bore water. (4) Flow reported to be 299,300 g. p. d. in 1907. (5) First flow of 2,000 g. p. d. at 1,280 feet.

187. Burleigh—(1) Orig. flow., 70,000 g. p. d. from 416 feet. (2) Orig. flow, 640,000 g. p. d. from 619 feet. (4) Former flow, 250,000 g. p. d. (6) Former flow, 500,000 g. p. d.

189. Burranbilla—

(1) Inspected April, 1911, *see* table for data; flow calculated from jet; duration of static pressure, 80 minutes; potential H.P. interpolated; bore surrounded by a lake about a mile long and up to 5 feet deep; outlet about 2.5 feet above W.L.; water is 3 feet deep at bore; slight leakage outside casing, which increased with pressure; casing used 102 feet of 10-inch, 271 feet of 8-inch, and 1,554 feet of 6-inch.

(2) Reputed flow after completion, 3,000,000 g. p. d.; temp., 124° F. Inspected May, 1911, *see* table for data; static test of 70 minutes.

(3) Est. flow after completion, 3,300,000 g. p. d. Inspected April, 1911, *see* table for data; outlet, 6 feet above ground; static test of 12 hours 8 minutes.

(4) Est. flow after completion, 2,500,000 g. p. d. Inspected May, 1911, *see* table for data; outlet, 2.5 feet above ground; valve casing worn away by action of sand in the water; static test of 11 hours 16 minutes.

194. Caledonia—(1) Flow reported to be 5,500 g. p. d. in 1907. (2B) Bores A and B are 10 feet apart.

195. Cambridge Downs—During 1899 old bores were deepened to the extent of 1,600 feet. Bore water corrodes casing in two bores, numbers not known.

196. Glenisla—Has 13 miles of drains and 7 miles of channels.
Runnymede (1)—Orig. flow, 800,000 g. p. d.; flow considerably less in 1907.

200. Canobie—(1 and 2) Reported in 1907 that flows were diminishing. (3) Struck water at 1,492 feet; finished boring in granite. (4) First supply at 1,570 feet just flowing. (5) Bore flows while pumping. (6) Supply at 1,550 feet rose to 25 feet from surface; flow at 1,650 feet, 170,000 g. p. d.; at 1,830 feet, 300,000 g. p. d.

201. Carandotta—Head station—Salt water on top cased off.

203. Cassilis—

(1) Cased to sandrock with 6-inch casing; orig. flow about 850,000 g. p. d.; in Dec., 1901, about 425,000 g. p. d.

(2) Cased at first to sand rock only with 6-inch casing; flow about 1,200,000 g. p. d.; after a time flow diminished to about 630,000 g. p. d.; after removing a bridging of 30 feet, and inserting 5-inch slotted casing below the 6-inch casing, the flow (Dec., 1901) was about 876,800 g. p. d.

(3) Cased with 5-inch casing; bore site on very elevated country; flow originally about 230,000 g. p. d.; W.L. (Dec., 1901) 6 feet below the surface.

Glenlyon—Cased with 6-inch casing to first sand rock at 2,076 feet, then with 5-inch slotted casing to bottom; flow before inserting 5-inch casing, about 920,000 g. p. d.

204. Champion Blocks—(1) Former est. flow, 25,000 g. p. d.; flow measured July, 1911. (2) Former est. flow, 200,000 g. p. d.; flow measured July, 1911. (3) W.L. stood originally 9 feet below surface; inspected July, 1911. In one of these bores *limestone* is said to occur at 313 feet.

205. Meat Works—Water better than that of Charleville town bore, and does not evolve gas when freshly drawn; inspected Nov., 1898; flow reported to be 950,000 g. p. d. in 1907.

Wallal—Orig. est. flow, 1,500,000 g. p. d.; first flow at 1,500 feet, second near bottom; minute bubbles of gas issuing; about 30 miles of bore drains; outlet 4 feet above ground; inspected Nov., 1910, *see* table for data.

Myendetta—Fine flows met with; about 30 miles of bore drains. Outlet 3.5 feet above surface; flow throttled by borehead to an extent of 3.5 feet. Inspected Nov., 1910, *see* table for data.

206. Charlotte Plains (Cunnamulla)—

(1) Bore deepened from 1,550 feet; est. flow then 2,300,000 g. p. d., temp. 118° F. Inspected April, 1911, *see* table for data; borehead leaking; static head and potential H.P. estimated; outlet 14.3 feet above surface.

(2) Est. flow after completion, 3,300,000 g. p. d. First inspection Feb., 1896, measured flow then 2,378,380 g. p. d., temp. 117.5° F. Second inspection April, 1911, *see* table for data; outlet 5 feet above original surface; 6-inch casing seriously corroded; static head estimated.

207. Charlotte Plains (Richmond)—(1) Orig. W.L. 18 feet below surface. (2) First flow at 210 feet, 100,000 g. p. d., ceased flowing, bore then deepened. (3) Orig. W. L. 30 feet below surface. (4) Two flows like No. 2 bore. (5) Water level orig. 20 feet below surface; in May, 1891, 29 feet; in 1907, 45 feet. (6) Water level, after passing 276 feet, fell from 110 to 145 feet, and rose again to 132 feet, when bore was filled up to 270 feet; W.L. in 1907, 140 feet below surface. (8) At 550 feet a seam of *coal* 15 feet thick; water not used.

210. Kalkie—A shaft to 76 feet, then a 10-inch bore; pumped 15,200 g. p. d. into shaft from bottom of bore.

211. Claverton—

(1) First inspected April, 1897; flow, 1,760,300 g. p. d.; outlet 12 feet above surface; static pressure 148 lb., temp. 117° F. Second inspection Nov., 1910, *see* table for data; water comes up gradually outside and will flood country around if valve is closed; bore only cased with 6-inch casing. Bore supposed to be under tidal influence.

(2) First inspection April, 1897; est. flow, 1,500,000 g. p. d.; temp. 124° F. Second inspection Dec., 1910, *see* table for data; outlet 6 feet above surface. Bore was never closed down; 6-inch casing only used; gas bubbles outside casing.

(3) First inspection April, 1897; est. flow, 1,500,000 g. p. d.; temp. 124° F. Second inspection Dec., 1910, *see* table for data; outlet 6 feet above ground level; valve very much corroded.

(4) Former flow, 3,000,000 g. p. d.; free flow 7.3 feet over 6-inch casing. Inspected Dec., 1910, *see* data in table; outlet 6 feet above surface; leakage outside of casing, 2,000 g. p. d., which increased to 5,000 g. p. d. during a short static test; gas bubbles in pool, which increased when flow under pressure.

Barbara—Inspected Dec., 1910, *see* table for data; outlet, 3.5 feet above surface; cased to bottom with 7-inch casing; three flowing supplies met with; quicksand near bottom of bore; no leakage outside casing during static test of 1½ hours; water has a slight odour when fresh, but no gas.

Airlie—Inspected Dec., 1910, *see* table for data; outlet, 3.25 feet above surface; no leakage of water or gas during static test of 40 min. Large quantity of driftsand thrown up when main flow was struck, but caused no trouble.

Yarramanbar—Former flow, 1,500,000 g. p. d. Inspected Dec., 1910, *see* table for data; outlet 4 feet above surface; no leakage during static test of 13 minutes. When flushing the bore, the supply fluctuated to about half its normal flow for about 10 seconds, after which the water became turbid for a short interval. The bore was turned off for a few hours after completion, when water came up a few yards away from the bore, and about three months after the bore was again turned off for three days, and was then found to be quite tight.

Rosevale—Former est. flow, 1,700,000 g. p. d. Inspected Nov., 1910, *see* table for data; outlet, 7.5 feet above surface; full pressure not taken.

214. Clonagh—Supply from 800 to 850 feet; rose to within 4 feet of surface; at finish the bore had a flow of about 100,000 g. p. d.; primary rocks below 850 feet.

217. Nonda Downs—Deepest 8-inch bore in Queensland.

221. Compton Downs—(1) Ceased to flow; former reputed flow, 100,000 g. p. d.

224. Coongoola Lease—

(1) First inspection, April, 1896, flow, 377,450 g. p. d.; static pressure, 71 lb. Second inspection, March, 1911, *see* table for data; outlet 6 feet above ground, cased with 8 and 6-inch casing; no leakage outside casing; bore under static test behaved very erratically and apparently in spasmodic cycles, which can only be due to *pneumo-dynamic or gas pressure.*

(2) First inspection, April, 1896; flow, 479,000 g. p. d.; static pressure 123 lb., and temperature 108° F. Second inspection, March, 1911, *see* table for data; outlet 1.75 feet above surface; no leakage at surface during static test of 17 hours 20 minutes; flush after static test, 392,000 g. p. d.; borehead in fair condition after nearly 20 years; water has a decided smell of sulph. hydrogen.

(3) First inspection, April, 1896; flow then, 1,760,300 g. p. d.; temp. 124° F. Second inspection, March, 1911, *see* table for data; outlet 3.5 feet above surface; static test of 16 hours 45 minutes; temp. orig. 132° F.; considerable quantity of incrustation was present at the bore which has now disappeared.

(4) Free flow orig. 8 ft. 5 in. over casing. Inspected March, 1911, *see* table for data; outlet, 5.7 feet above surface; slight leakage outside casing, increased to 48,000 g. p. d. under static test of 2 hours, but diminished again after pressure was taken off; borehead thickly covered with incrustation; water tasteless, no gas; 40 miles of bore drains. *Limestone* bands occur in some of the Coongoola Bores.

Glenyarra—Orig. est. flow, 2,000,000 g. p. d. Inspected April, 1911, *see* table for data; bore was completely turned off for a day or two, showing no ill effects; valve leaking to the extent of 50,000 g. p. d. during static test of 75 minutes; outlet 6.9 feet above ground; a few bubbles of odourless gas and small flow of water noticed outside casing, but did not increase during static test; supposed to come from 800-feet.

225. Boorte—Inspected March, 1911, *see* table for data; a well to 75 feet.

Offham (1)—Orig. the free flow was 3 ft. over 6-in. casing (reputed 2,000,000 g. p. d.), diminished to present volume after three weeks. Inspected Feb., 1911, *see* table for data; outlet 6.25 feet above surface; cased with 6 and 7-inch casing.

Offham (2)—Inspected Feb., 1912, *see* table for data; outlet 9 feet above surface; bore lined with 6-inch casing and a few hundred feet of 7 and 8-inch casing; a flow from an upper water bed of 110,000 g. p. d. issues between the 6 and 7-inch casing, but did not increase during static pressure test; bore throws up a few pebbles of blue shale; valve casing worn through in places by sand brought up by the water; bore partly under pressure (28 lb.).

Victo—First inspection, April, 1896; flow then 1,760,300 g. p. d. Second inspection, Feb., 1911, *see* table for data; outlet 6.3 feet above surface; borehead throttles flow and causes a back pressure of 27 feet head; a flow of 11,000 g. p. d. is issuing between the 8-inch and 6-inch casing, increasing to 18,000 g.p.d. under full pressure, and bringing up sand. Static pressure taken a few years ago was a little over 100 lb.

Longlands—Orig. free flow, 9.25 feet over 7-in. casing. Inspected Feb., 1911, *see* table for data; loss of static head above surface caused by friction in borehead and 40 feet of piping is 11.5 feet; valve casing worn through by sand; flow partly controlled.

226. Coorabulka—(1) Flow at 654 feet, 360,000 g. p. d.; at 660 feet, 730,000 g.; at 744 feet, 1,000,000 g. (2) Flow at 941 feet, 1,050,000 g. p. d.; at finish flow fluctuating from 36 to 43 inches over casing. (3) Flow at 1,098 feet, 150,000 g. p. d.; at 1,250 feet, 930,000 g. (4) Flow at 1,242 feet, 150,000 g. p. d.; 1,325 feet, 750,000 g.; at 1,340 feet, 800,000 g. (5) At 198 feet, soakage (salt); at 650 feet, 2nd soakage; at 1,022 feet water rose to 50 feet; at 1,331 feet, small flow; at 1,548 feet, 1,930,000 g. p. d. (6) At 40 feet, soakage; at 245 feet, small flow; at 600 feet, flow 150,000 g. p. d.; at 768 feet, 700,000 g.; at 818 feet, 1,400,000 g.

227. Coreena—(1) Orig. flow, 100,000 g. p. d. (2) Former flow, 1,500,000 g. p. d. (3) Orig. flow, 350,000 g. p. d.; flow in 1904, 20,000 g. p. d. (4) W.L. orig. 70 feet; in April, 1901, 102 feet below surface. (5) Former flow, 750,000 g. p. d. (6) Orig. W.L. 5 feet below surface. (7) Bore recased in Jan., 1901; orig. flow, 100,000 g. p. d.; flow gradually stopped flowing in 1901. (9) Orig. W.L. at 200 feet. (10) Surface water at 130 feet; 2nd water at 205 feet, rose to 50 feet below surface; orig. flow, 541,000 g. p. d. (11) Flow from 1,085 feet, 193,000 g. p. d.; pressure 4½ lb.; temp. 104° F. (12) Salt water at about 120 feet; at 480 feet water rose to 2 feet; at 850, small dribble; flow at 1,007 feet. (13) Supply from 165 feet rose to 40 feet; flow of 100,000 g. p. d. at 215 feet; site 33 feet lower than No. 3b ore. (14) First water at 430 feet; a flow of 20,000 g. p. d.; at 490 feet slight increase; at 850 feet 370,000 g. p. d.; increasing gradually to full depth; site 15 feet lower than No. 2 Bore. Water evidently escaping into the upper waterbeds in No. 2 and No. 9 bores.

229. Corinda—(1) Supplies at 102, 207, and 307 ft. (2) Supplies at 119, and 318 ft. (3) Supplies at 108 and 216 ft. (4) Supplies at 63 ft. (5) Supplies at 141, 161, and 231 ft. (6) Supplies at 80 ft. (7) Supplies at 66 and 156 ft. (8) Supplies at 417 ft. (9) Supplies at 298 and 436 ft. (10) Supplies at 141 and 413 ft., and flow diminishing. (11) Supplies at 394 and 511 ft. Porous bed at 603 feet plugged with concrete, &c. (12) Capacity 400,000 g. p. d. (pumped). (13) 3 supplies at 256, 274, and 372 feet. (16) Former depth, 1891, 194 feet; flow, 17,100 g. p. d., head of 4 feet, temp. 84° F. (22) Former depth, Nov., 1891, 360 feet, W.L. 14 feet below surface. (23) Supplies at 96 and 229 feet. (27) Supplies at 134 and 345 feet. (29) 5 separate very small supplies; very little water; well to 75 feet; former W.L. about 54 feet. (30) Supplies at 229 and 509 feet; sunk to 541 feet in 1896; W.L. then 16 feet below surface. (32) Bottomed on red rock; bore reported in 1907 as sub-artesian, with a W.L. of 45 below surface. Bore few yards from No. 10.

232. Cressbrook—Bands of *limestone* said to occur in some of these bores.

234. Burslem—Flow at completion, 180,000 g. p. d.; gradually stopped flowing in Dec., 1906; bore then cleaned out without recovering flow; W.L. June, 1907, 6 feet below surface.

235. Hariman Park—Est. flow after completion, 3,600,000 g. p. d. Inspected, March, 1896; measured flow then 1,720,000 g. p. d.; second inspection, April, 1911, *see* table for data; static test of 27 minutes.

Horton Vale—Est. flow after completion, 2,600,000 g. p. d.; static pressure, 116 lb.; first flow at 1,500 feet; 10 distinct beds. Inspected March, 1911, *see* table for data; flow controlled to about 550,000 g. p. d.; loss by friction in pipes above surface 17.8 feet; static test of 28 minutes; bore drains distributed over several grazing farms.

Nine Miles—Flow after completion, 3,000,000 g. p. d.; first flow at about 1,800 feet; outlet 4.75 feet above ground; static test of 2 hours 30 minutes; inspected April, 1911; for data *see* table.

Moorabindah—Orig. est. flow, 2,350,000 g. p. d.; cased with 6, 7, and 8-inch casing; static test of 45 minutes; outlet 1 foot above surface. Inspected April, 1911.

237. Kahmoo—Measured flow after completion, 1,286,200 g. p. d.; pressure, 109 lb.; temp. 106° F.; about June, 1910, pressure registered 80 lb. Departmental inspection, May, 1911, *see* table for data; outlet 13.8 feet above surface; static test of 3 hours; the bore is evidently sunk to the upper water-bed only, which may account for the large loss in flow.

Waihora—Est. flow after completion, 1,250,000 g. p. d.; temp. 112° F. Inspected June, 1911, *see* table for data; outlet 13.5 feet above surface; static test of 70 minutes, leakage outside casing bringing up fine grey sand, but leakage ceased again within 1½ hours after reopening the bore; a similar result observed some years ago; a mud-spring was met with at 100 feet, first flow at 500 feet; after clearing bore-casing the free flow fell from 18 to 14 inches.

Strathlea—Est. flow after completion, 1,300,000 g. p. d.; static pressure 112 lb. after few minutes' closure; temp. 117° F. Inspection, June, 1911, *see* table for data; outlet 3 feet above ground; the first flow after about a week's suspension of work, fell from 6 feet to 2 feet over the outlet, when drilling was resumed and the second flow struck only about 4 feet deeper; static test of 25 minutes; nearly 60 miles of bore drains running in five directions.

Bowra—Est. flow after completion, 3,200,000 g. p. d. Inspected June, 1911, *see* table for data; outlet 4 feet above surface; static test of 90 minuees; incrustation at outlet.

Sedenen—Est. flow after completion, 100,000 g. p. d. Inspected May, 1911, *see* table for data; outlet 2.7 feet above surface; static test of 30 minutes; situated on summit of watershed; flow was struck at about 1,200 feet, and 4-inch casing was then used through bedrock to the bottom of bore; bore runs from 9 to 12 miles of bore drains.

Ginnenbah—Est. flow after completion, 1,640,000 g. p. d. Inspected June, 1911, *see* table for data; outlet 1 foot above surface; static test of 3 hours 12 minutes.

238. Dagworth—(1) Water deposits calcareous and ferruginous stalagmite. Second hottest flow in Queensland. Est. flow after completion, 1,250,000 g. p. d.; free flow then 15 inches above casing. First inspection, Jan., 1896; flow, 775,000 g. p. d., flowing 11.5 inches over casing; static pressure 40 lb.; H.P., 5.2. Est. flow in 1907, 300,000 g. p. d. Second inspection, May, 1911; flow, 94,400 g. p. d., with a free flow of 1 inch over 6-inch casing; a large amount of gas issuing.

(2) Inspected May, 1911. Flow, 4¼ inches over 6-inch casing. First flow was tapped at 2,710 feet; from 2,800 to 3,100 feet an increase was met with at about every 15 or 20 feet, and the last flow was tapped at 3,200 feet, increasing to 3,340 feet.

239. Fairview—Inspected June, 1911; flow about 800,000 g. p. d. Flow is not diminishing.

240, 241. Dalby North and South Districts—" Five-mile Dam," formerly called Jimbour bore. *See* G.S.Q.P. No. 143, p. 20 (1899).

Irvingdale—Water fresh. O'Keefe's—Water brackish.

J. D. Mulholland—Water very salt.

L. Riethmüller—Salt water at 67 feet; fresh water at 80 feet; salt water not shut off.

242. Dalgonally—(1A) Dry; sunk at bottom of 80-foot well. (2) Ceased in 1906; former flow 9,700 g. p. d., with a head of 32 feet; water not used. (3) Bore deepened; former flow from 292 feet, 3,900 g. p. d.; head, 4 feet. (4) Flow reported to be a trickle only in 1907. (6) Met with 5 feet of very fine white driftsand at 700 feet, then soft clay, and stopped in very hard rock.

244. Dalzell—

(1) Ceased flowing; loss of head from year to year averaged about 7 inches per month; head in 1892, 48 feet; a sudden drop of flow was noticed when No. 5 bore began to run. W.L. 18 feet below surface about May, 1907.

(2) Head, 10 feet in July, 1896. Ceased flowing; former flow, 41,000 g. p. d., with static head of 6 feet. W.L., in May, 1907, 15 feet below surface.

(3) Loss of head, 4 feet in two years, or only about 2 inches per month. W.L., in May, 1907, 30 feet below surface.

(4) Flow measured 5 feet above surface (Oct., 1899); est. flow in May, 1907, 150,000 g. p. d.; static pressure, 3 lb.

(5) Ceased flowing; W.L., in May, 1907, 15 feet below surface; former flow, 89,000 g. p. d., with a static head of about 3 feet.

245. Darr River Downs—

(2) First supply at 700 feet, rose to 120 feet; pumping supply of 35,000 g. p. d.; bore deepened in 1901; reputed flow, 500,000 g. p. d.

246. Darr Water Farms—A well to 300 feet, with a supply of 2,000 g. p. d.; bored 70 feet; water slightly brackish, but improving.

248. Delta—Orig. flow about 500,000 g. p. d.; temp., 120° F.

249. Devoncourt—12 sub-artesian bores on station (May, 1910).

250. Dillalah—

(1) Orig. depth, 1,344 feet; flow about 120 g. p. d. Deepened in 1894. Est. flow (May, 1897), 1,700,000 g. p. d. Last inspection, Nov., 1910, *see* table for data; outlet 3 feet above surface.

(3) First inspection, May, 1897; flow, 958,060 g. p. d. Second inspection, Nov., 1910, *see* table for data; outlet 9 feet above surface; flow throttled by plug-valve causing a loss of 7 feet at static head; casing rusted through in places.

251. Doner's Hill—Supply from 1,996 feet rose to within 90 feet of surface; water highly mineralised.

252. Duaringa—Bores sunk in search of coal; No. 2 Bore met with *coal* at 437 feet. *See* G.S.Q.P No. 155, p. 20 (1901); 159, p. 16 (1900).

254. Dynevor Downs—(1 and 5) Met with loose boulders. (2) Flow reported to be 1,200 g. p. d. in 1907. (3) Sand rising. (4) Flow reported to be 1,300 g. p. d. in 1907.

255. Eddington—A and B only 55 feet apart. Strata pierced very similar in all the bores; blue shale at 50 feet, which continued until sandrock was reached, the latter ranging from 40 to 200 feet in thickness; all the bores tapped only one flow immediately after entering into sandrock, the flow gradually increasing until striking very hard rock, possibly of primary formation; No. 3 bore met with about 200 feet of sandrock; in No. 4 the sandrock is very coarse, almost a gravel bed; No. 6, after sinking through the sandrock met with about 200 feet of soft strata, pipe-clay, &c., and then finished in very hard strata without increasing in flow; No. 10, although lower in elevation than No. 2 bore, has a smaller flow; the sandstone met with is very hard, fine-grained, and only about 40 feet thick; drilling discontinued, apparently in granite. The flows of Nos. 1 to 12 bores in Feb., 1908, have evidently fallen off, but no reliable data to hand; No. 1 bore measured in March, 1899; flow, 892,000 g. p. d.; static head of 331 feet; potential horse-power, 22.6. The figures in column 10 is the depth to the sandrock; temp. falling off from 1 to 2 degrees in nearly all of the older bores.

Camarooka—Flow when first tapped, 1,200,000 g. p. d.

256. Elderslie—

(1) About half of the quantity of water is issuing from the outside of the casing, surface; met driftsand; gas issuing when inspected (May, 1911). Orig. flow, 300,000 g. p. d., but diminished radiply. Water inferior.

(2) It is claimed that this is the *largest flow* from such a great depth, and the *bore water the hottest* in Queensland. The bore has a string of 6-inch casing to a depth of 4,000 feet.

(3) Sub-artesian supply at 2,980 feet; water rose to 40 feet below surface. Three shallow test bores were sunk in January, 1907, on Elderslie, one bore yielding a pumping supply of 1,500 g. p. d., another, 700 g. p. d., a third, a mere soakage.

257. Elmina—(2) Large flow when water was tapped, but diminished greatly within a few weeks; former reputed flow, 1,400,000 g. p. d. (3) Upper water-bed cased off; bores 2 and 3 are only 30 feet apart.

261. Eton Vale and Harrow—Silt met at 40 feet, 18 feet thick; subterranean river bed.

262. Eulolo—(2) Granite bottom; cleaned in 1896. (7) Flow at 1,350 feet, 230,000 g. p. d.; at 1,374 feet, 440,000 g.; at 1,404 feet, 780,000 g.; at 1,439 feet, 870,000 g.

266. Tilbury's—Water at 350 feet and 970 feet. Castleroi—(1) Formerly flowing, volume not known. Inspected July, 1911; short pump lift. (2) Inspected July, 1911; flow measured, *see* table; short bore drain to water-hole. Westhill—Inspected July, 1911; no additional flow tapped after 1,100 feet.

268. Fernlee Run—The flow at Queen's Birthday Bore is said to have a daily tide of about 2 inches.

269. Port Constantine—(1) About 40 cubic feet of fire-damp per day. (2) Tools jammed and lost at bottom. (3, 3A, and 3B) About 17 feet apart. (4 and 5) Adjoin No. 3, abandoned and filled in. (8) Fire-damp emitted. (9) Tools jammed since 1896.

271. Glendower Run—The sub-artesian supply tapped at 155 feet suddenly stopped when bore reached 675 feet, but was restored when bore was filled in to 600 feet.

276. Gordon Downs—A great number of successful wells have been sunk on this run, some being pumped.

278. Granada—(1) Granite at 510 feet; drilled 50 feet into it. (2) Surface supply at 80 feet; water rose to 37 feet; met with bands of quartz at 900 feet, quicksand at 1,200 to 1,300 feet, hard, red sandrock at 1,310 feet; tools lost at 1,350 feet; it is believed that a supply exists below the red sandrock, as in Canobie No. 3 bore.

280. Greendale—Originally a sub-artesian bore; water drawn off at 15 feet below surface; flow measured by Water Supply Department, 9th March, 1911.

282. Greenmount—Near Warwick Rail.; 3 bores 90 to 130 feet; pumped; other bores sunk before 1905.

284. Hamilton Downs—(2) Met with separate flows at 2,128, 2,160, 2,430, 2,500, 2,660, and 3,200 feet; no increase of flow observed below 3,200 feet. Belford—Water in drains flows 7 miles in summer and 14 miles in winter; orig. est. flow, 1,500,000 g. p. d.

285. Hamlet Downs—(1) Flow measured 4½ feet above surface (Oct., 1899).

288. Helidon—All these bores supply natural aerated and potable *mineral water* from the coal measures; bore 3A had originally a flow of 10,000 g. p. d.; pumping supplies not tested to full capacities.

289. Herbertvale—(2) A well to 126 feet. (4) Drill met with numerous flint (?) boulders. Caves, and fissures in *limestone* were also passed through.

293. Coolibah—(1) Orig. small dribble, now sub-artesian. (2) Flow at 940 feet about 40,000 g. p. d.; at 1,002 feet, 340,000 g.; at 1,304 feet, 370,000 g. Farnon Downs—Orig. flow, 20,000 g. p. d.

295. Newstead—The bore waters flow along 30 miles of natural and artificial channels.

Irvingdale—Stopped in 167 feet of hard red sandrock; former flow, 309,000 gallons per day; flow, Sep., 1899, 163,000; static head, 35 feet; temp., 131½° F.; former depth, 2,217 feet. Deepened to 2,700 feet; flow ceased, but date not known; W.L., May, 1907, 6 feet below surface; bottom in granite.

297. Inverleigh—Soakage at 130 feet; at 2,290 feet water rose to 60 feet below surface; at 2,300 feet to 30 feet below surface; at 2,310 feet, small flow; at 2,330 feet, flow 300,000 g. p. d.; at 2,375 feet, 850,000 g.

302. Jondaryan—Near S. and W. Railway; five bores 80 to 130 feet deep; cutting made below water-level at one bore to give small flow.

303. Katandra—(1) Orig. flow, 24,000 g. p. d. (2) Former flow, 120,000 g. p. d. (3) Accident stopped bore being continued. (4) Depth in 1900, 1,150 feet; work resumed in 1904.

305. Kilcummin—Small supplies of salt water.

306. Kynuna—

(1) On summit of watershed; quartzite at 1,610 feet, when increase of water stopped; former W.L. in Feb., 1896, 65 feet below surface; W.L. in May, 1911, about 155 feet below surface.

(2) Water deposits iron oxide whilst cooling; ceased flowing in July, 1904; orig. flow, 595,000 g. p. d.; static head, 53 feet; W.L., in April, 1911, about 38 feet below surface.

(3) Ceased flowing in Oct., 1903; orig. est. flow, 550,000 g. p. d.; W.L. in April, 1911, 54 feet below surface.

(4) Ceased flowing, May, 1907; orig. est. flow, 750,000 g. p. d.; W.L. in April, 1911, about 33 feet below surface.

(5) Ceased flowing, July, 1905; orig. est. flow, 500,000 g. p. d.; W. L. in April, 1911, about 54 feet below surface; a 7-foot seam of *coal* at about 2,670 feet.

(6) Orig. est. flow, 1,200,000 g. p. d.

(7) Orig. est. flow, 230,000 g. p. d.; ceased flowing about Feb., 1910; W.L. in April, 1911, 16 feet below surface. While pumping the W.L. stands about 13 feet higher in the bore casing; bottom in hard rock.

The figures given for bores 1 to 5 in column 16 were obtained when pumping was started in each bore; volumes may now be less.

306 Kynuna—*continued.*

Grendon, Kynuna Resumption—

(1) Orig. est. flow, 1,000,000 g. p. d.; pressure, 60 lb. Inspected June, 1911; flow then est. at 500,000 g. p. d.

(2) Orig. est. flow, 370,000 g. p. d. Ceased flowing three years after completion; W.L. fell 8 feet below surface in a few hours. Inspected June, 1911; W.L. then 15 feet below surface. Bottom in very hard red formation.

307. Poimena—Orig. flow, 1,400,000 g. p. d. Glembervie (2)—Mineral like rock salt met with in shale; struck small soakage at 850 feet, and flow at 1,350 feet.

308. Waniola—Former est. flow, 1,500,000 g. p. d. Rosemead—Former est. flow, 1,250,000 g. p. d.

309. Lake Dunne—Flow, 50 g. p. d. through trench 1 foot below the surface.

311. Lammermoor—(1) Bore collapsed; 22 feet N.W. from No. 2. (2) Pumped 180 feet. (3) Abandoned in quicksand; adjoins No. 5. (4) First supply at 420 feet rose to 88 feet below surface; pumped 380 feet. (5) First supply at 400 feet rose to 88 feet below surface; pumped 150 feet; former depth, 820 feet; and W.L., 283 feet.

312. Landsborough Downs—(1) Orig. W.L., 13 feet below surface.

(3) At 1,285 feet, flow 9,600 g. p. d.; at 1,377, 38,400 g. p. d.; at 1,628 feet, 170,000 g.; at 1,688 feet, 280,000 g.; at 1,743 feet, 440,000 g.; at 1,845 feet, 480,000 g.; at 1,885 feet, 490,000 g.; at 1,943 feet, 520,000 g.; at 1,977 feet, 540,000 g.; and at 2,021 feet, 680,000 g. At a depth of 1,377 feet the static head was 28 feet; at 1,791 feet, 36 feet 6 inches; and at 2,045 feet, 38 feet 4 inches.

313. Lansdowne—(1) The Toolmaree Bore was sub-artesian; flowing bore made by cutting trench in the hillside; flow then 32,000 g. p. d.

316. Llanrheidol—

(3) Small soakage at 280 feet; slight increase at 315 feet; at 1,645 feet a flow of about 106,000 g. p. d., and rest of yield at 1,709 feet.

318. Rosedale (2)—A seam of good *coal* at 150 feet.

319. Lucknow—(1) Depth in 1907, 1,411 feet; flow, 280,000 g. p. d. One of the bores is reported to have ceased flowing (Feb., 1910).

320. Mackay Gasworks—Bore overflows into well below surface. Fairleigh—Water obtained in soft granite.

321. Malula—Two seams of *coal* were passed through.

322. Malvern Hills—Water not utilised; about 7,000 g. p. d. from lowest waterbeds; upper supplies cased off.

324. Manfred Downs—(1) Four different supplies. (3) Closed by ball valve; max. flush, 25,000 g. p. d. (4) Closed by ball valve; max. flush, 7,600 g. p. d. (5A) Water not used. (6) Orig. depth, April, 1886, 200 feet; closed by ball valve; max. flush, 14,250 g. p. d. (7) Closed by ball valve; max. flush, 14,250 g. p. d. (10A) Permanently closed; flow very small; pressure good. (13) Deepened to granite; no further supply. (20) No flow below 450 feet; bottomed on granite. (21) No flow below 605 feet; bottomed on granite.

325. Quarrell's—(8B) Bore closed with a cap and small plug; max. flush, 16,200 g. p. d. (9) Salt water.

326. Oxton Downs—(15) Water issues from a crack in granite at 1,060 feet.

328. Manuka—(1) Ceased flowing; orig. flow, 500,000 g. p. d. (2) Had a flow of 200,000 g. p. d. when completed; ceased flowing about Aug. 1901. (3) Salt water at 78 feet. (4) Salt water at 93 feet; small supplies at 163 feet and 200 feet; water brackish, but suit stock. (5) Small supplies at 98 feet and 160 feet; water fresh. (6) Water from 120 feet rose to 40 feet; more water at 162 feet; fairly fresh water.

329. Malboona—Orig. flow, 193,000 g. p. d.; ceased flowing; W.L. in Sep., 1901, 18 feet below surface; about May, 1907, 35 feet below surface.

331. Marathon—(5) Orig. depth, 900 feet; flow, 50,000 g. p. d.; temp. 90° F. Bores 3, 5, and 7 ceased flowing; dates not given. Orig. flows of 3 and 5 bores, 700,000 g. p. d. each; of 7 bore, 400,000 g. p. d.

332. Tweedsmuir—Depth in March, 1897, 1,400 feet; flow, 260,000 g. p. d.

333. Marion Downs—(1A and 1B) Only a foot apart; 1B bored into 1A; 1C is 6 feet from 1A and 1B. (1C) Water contained from 2 to 4 oz. of salt per gallon. (2) Flow at first 5,000 g. p. d.; ceased after withdrawing outer casing.

334. Maxwellton—Orig. flows: (1) 500,000 g. p. d., depth, 1,355 feet; (2) 800,000 g.; (3) 700,000 g.; (4) 700,000 g.; (5) 1,000,000 g.; (6) 1,500,000 g.; (7) 1,200,000 g. Flows in 1902: (1) 1,000,000 g. p. d.; (2) 550,000 g.; (3 and 4) 330,000 g., each; (5) 800,000 g.; (6) 920,000 g.; and (7) 1,150,000 g.

335. Wimmera—Orig. flow, 1,000,000 g. p. d.; 14 miles of bore drains. Bundorin—Flowing 34 inches over casing (1902).

336. Merina—A well to 98 feet, bored 17 feet.

337. Millungera—(1) Very great leakage around casing. (5) Small flow at 750 feet; orig. flow, 1,025,000 g. p. d.; flow, Aug., 1901, 800,000 g.

339. Minnie Downs—(1) First supply at 725 feet; salt; second supply at 2,476 feet, rose to within 180 feet of surface; water struck from 2,300 to 3,250 feet, rising to 120 feet below surface; 6-inch steam pump erected. (2) Flows at 2,900 feet, 2,979, 3,079, 3,200, 3,650, and 3,900 feet.

341. Mona—(1) Measured flow, June, 1896, 490,100 g. p. d.; static head, 196 feet. (2) Orig. flow, 2,000,000 g. p. d. (3) Orig. flow, 2,300,000 g. p. d.

342. Moreston Downs—(1) Soakage at 140 feet; a pumping supply at 309 feet. (and 3) Bottomed in hard *limestone*.

343. Beaudesert (Moreton)—Collapsed (1895).

347. Mt. Cornish—(1) Orig. flow, 576,000 g. p. d. (2) Soakage at 310 feet; small flow at 2,180 feet; at 2,400 feet, flow 165,000 g. p. d.; at 2,270 feet, 335,000 g.; increasing to 420,000 g. down to 2,900 feet.

348. Mt. Enniskillen—(A) In a flowing spring. Inspected 11th July, 1898; flow then, 1,158 g. p. d.; static pressure, 3 to 4 lb.; temp. taken after a frosty night. The bore requires periodical cleaning; water mineral, but suit stock (March, 1911). (I) Desert soak only. Abandoned 1896. (B to I) In Desert Sandstone Formation. (1) Work suspended in April, 1899, at 800 feet; sub-artesian supply at 868 feet, rose to 120 feet; at 1,600 feet water rose to 10 feet; first flow at 2,300 feet, increasing to 2,900 feet; no further supply. (2) Sub-artesian supply at 460 feet; flows at 900, 1,500, and 2,000 feet; from 2,000 feet flow increased with depth. Cased with 1,000 feet of 6-inch casing, and 2,200 feet of 4-inch casing. (3) Free flow 8 inches over 6-inch casing (April, 1911). (5) Free flow 5.75 inches over 6-inch casing. (March, 1911).

349. Macfarlane Downs—Intended to deepen No. 1 bore; water not used (salt). No. 2 bore not used; water brackish. (Feb., 1911.) Doyle's—(1 and 2) Water brackish, but suit stock; W.L. falls to 260 and 240 feet respectively when quantities as given in table are pumped. (Jan., 1911).

354. Mulga Downs—(1) Flow from 1,687 feet in 1896, 763,950 g. p. d.

356. Murweh—

(1) Former measured flow, May, 1897, 1,615,600 g. p. d.; outlet then 11.25 feet above surface and flow probably throttled by a plug valve. Inspected Nov., 1910; flow, 1,215,400 g. p. d. at surface of ground; slight leakage outside 8-inch casing.

(2) Flow, May, 1897, 277,680 g. p. d. Inspected Nov. 1910, *see* table for data; outlet 6 feet above ground; free flow 1.75 inches over 8-inch casing; depth 1,298 feet; bore discharging very small pebbles of sandstone and shale, also a little gas.

(3) Former flow, April, 1897, 784,150 g. p. d.; pressure not taken. Second inspection, Nov., 1910, *see* table for data; outlet 2 feet above surface; 6-inch casing fairly sound, but pitted on the outside.

(4) Flow, April, 1897, 784,150 g. p. d.; outlet 5 feet above ground. Second inspection, Nov., 1910; flow, 501,700 g. p. d. at surface; in 1909 the flow was cut off for three weeks, which caused the borehead to sink out of sight, and scoured a hole 20 feet in diameter and 10 feet deep; two additional lengths were screwed to the sunken borehead, but only about 50,000 g. p. d. are now flowing 5.75 feet above the surface.

(5) Supply at 105 feet rose to 70 feet; flows tapped at 1,345, 1,356, 1,547, 1,600, 1,644, 1,753, and 1,780 feet; first flow in a sandbed, others in sandrock from 5 to 40 feet thick; very troublesome drift sand at 270 feet; clay at bottom of bore. Cased with 16-inch casing to 50 feet, 8-inch to 311 feet, and 6-inch to 1,780 feet. Inspected Nov., 1910.

357. Rutherford's—Former flow much larger; slight leakage outside of casing, which increases under pressure; outlet 5 feet above surface; head at outlet 2 feet; 4-inch casing rusted through in places. Inspected Nov., 1910, *see* table for data.

Kenmore—Three water-bearing beds, the lowest 40 feet thick; depth, 1,898 feet; outlet 3 feet above surface. Inspected Nov., 1910, *see* table for flow, etc.; about 20 miles of bore drains. Bore also known as '' Wheatleigh.''

Springfield—Orig. est. flow, 800,000 g. p. d. Inspected Nov., 1910, *see* table for data; outlet 3 feet above surface; while flushing, a quantity of sandy shale chips were discharged from the bore.

Quilberry—Inspected Nov., 1910, *see* table for data; supply at 240 feet; last flow at 1,877 feet. Bore cased with 157 feet of 10-inch casing, 388 feet of 8-inch, and 1,877 feet of 6-inch casing; water flows over 50 miles of bore drains.

358. Acacia Downs—Former flow, 500,000 g. p. d., decreased to 300,000 g.; deepened from 2,418 feet to 3,030 feet in 1908.

361. Nive Downs—(1) Orig. W.L. 32 feet below surface. (2) W.L. reported 8 feet higher in May, 1907. (?) (3) Orig. depth, Nov., 1898, 1,232 feet, W.L. about 100 feet below surface; deepened about end of 1899, and obtained a flow of 170,000 g. p. d.

Yandarlo (1 to 4)—Strata chiefly black and greasy shale; supplies struck in white sandstone; water brackish, but suit stock; bores 1 to 4 cased with 5-inch casing to a depth of 744, 597, 775, and 171 feet respectively.

West Quarters—(1) Water from 650 feet is of poor quality; no water tapped in white sandstone between 700 feet and 900 feet. (2) Bottomed in sticky, dark-blue shale.

Chatham—First water at 80 feet; main supply at about 900 feet.

363. Noorama—(3) Flow at 1,600 feet; 40 feet of hard rock at 1,480 feet; bottomed on quartz schist at 1,710 feet.

367. Northampton—

(1) Bore deepened in 1904 from 1,332 feet. First inspected July, 1898, *see* table for data. Very saline water at 390 feet, which rose to 145 feet; first flow at 1,332 feet, 250,000 g. p. d.; temp. 106° F.; other flows between 1,700 and 1,813 feet; flow measured after completion barely 1,000,000 g. p. d., temp. being then 112° F.; altitude levelled, May, 1911; bore water corrodes bore casing. Cased with 200 feet of 10-inch casing and 1,216 feet of 8-inch casing.

(2) Flow at 1,048 feet, 260,000 g. p. d.; at 1,645, 301,800; at 2,060, 515,400; at 2,344, 1,390,000; at 2,557 feet, 1,620,000 g.; flow not measured when inspected (May, 1911).

(3) Cased with 54 feet of 8-inch casing and 3,122 feet of 6-inch casing. At 1,400 feet the W.L. stood at 30 feet; at 1,700 feet the temp. of the water increased, but the W.L. remained the same; at 2,050 feet the free flow was 4 inches over the 6-inch casing; at 2,590 feet, 9 inches, and after completion, 13·5 over casing. Altitude levelled, May, 1911.

373. Penola Downs—(1) Orig. flow, about 100,000 g. p. d.; May, 1907, pumped 45 below surface. (2) Orig. flow, 150,000 g. p. d.

374. Portland Downs—Water contains some gas, probably fire-damp.

375. Quambeytook—Water rose 4 feet over 6-inch casing in Aug., 1896.

376. Redcliffe—(1) First supply from 645 feet, rose to 40 feet below surface; pumped 90 feet. (3) First water at 920 feet, second water at 1,150 feet; pumped 25 feet from surface.

379. Richmond Downs—(4) All the water comes up outside of casing. (6) Ceased flowing before Feb., 1907; former reputed flow, 200,000 g. p. d. (7) Former W.L. 50 feet below surface.

381. Rocklands—Supplies of bores 1 to 7 have been tested to 120,000 g. p. d.

382. Rockwood—(1) Bore emits a very large flow of fire-damp gas; flow reported, 10,000 g. p. d. in 1907. (2) Former reputed flow, 700,000 g. p. d. (3) Former reputed flow, 750,000 g. p. d. (4) Former W.L., 80 feet below surface. (6) Former W.L., 38 feet below surface.

385. Mineral Oil Company—At 525 feet, small flow of brackish water, containing about 1.5 oz. of saline substance per gallon; at 1,590 feet flow was 138,000 g. p. d. of fresh water; drills working in hard shale became highly magnetic; at 3,702 feet (Oct., 1908) struck a large volume of *illuminating gas*, estimated at over 1,000,000 cubic feet per diem, and issuing under a pressure from 200 to 300 lb. per square inch; gas ignited, destroyed the iron derrick; flame extinguished (11th December, 1908) by covering bore with iron hood, after burning for two months. *See* "Q'land Gov. Min. Jour'l," Jan., 1909. Gas ceased to issue (27th Jan., 1909) after flowing 78 days.

386. Glenalven (Rosewood)—Bores Nos. 1 and 2. Only 200 years apart; in both bores a small quantity of *inflammable gas* was tapped at about 70 feet.

387. Ruthven—(1) First flow of 400 g. p. d. at 1,319 feet; main flow at 4,070 feet; estimated flow in 1907, 170,000 g. p. d.; water brackish; 4,032 feet of 6-inch casing in bore. (2) Supply at 600 feet rose to 90 feet from surface; at 3,309 feet more water; at 3,546 met with sand, W.L. at 300 feet; at 3,552 feet flow was 800 g. p. d.; at 3,842 flow was 4,300 g. p. d.; at 3,898 feet was 15,000 g. p. d.; at 3,930 feet, flow was 46,080 g. p. d.; water of good quality; *natural gas* issuing. Paraffin was obtained from this bore. *See note under* Paraffin Wax.

388. Saltern Cr.—(1) Ceased to flow in 1895, now pumped. *See* pressure notes, Ann. Rep., Hydr. Engineer, 1898; W.L. in 1898, 4 feet below surface. (2) Former flow, 70,000 g. p. d.; static head 72 feet. (4) Former est. flow, 700,000 g. p. d.; static head 116 feet. (5) Former est. flow, 500,000 g. p. d. (6) Former est. flow, 700,000 g. p. d. (7) When second flow of a new bore, about 5 miles east, was struck in June, 1899, this bore ceased to flow, and the potential fell to 12 feet below surface; estimated mean loss of potential since 1893 about 8 feet annually; W.L. 13 feet below surface (Oct., 1899), and 36 feet (May, 1907); former flow, 50,000 g. p. d. (8) Former est. flow, 600,000 g. p. d. (9) Former est. flow, 500,000 g. p. d. (10) Former est. flow, 1,000,000 g. p. d.

390. Savannah Downs—

(1) Small flow at 220 feet in green sand; second flow in coarse sandstone at 700 feet after sinking in the sandstone about 100 feet; flow gradually increased until granite was met with at 790 feet; original flow, about 1,200,000 g. p. d.; now (Ap., 1901) 1,150,000 g. p. d.

(2) Similar to No. 1 up to about 500 feet, where sandrock was entered and flow increased, continuing to do so until completion of bore; water-bearing strata not "bottomed," force of water prevented sinking. Flow has not decreased recently, it is thought.

394. Sesbania—(1) Orig. est. flow, 700,000 g. p. d. (2) Orig. est. flow, 650,000 g. p. d.; deepened in 1907 from 3,027 feet; water flowing through a trench; borehole filled up to 3,036 feet. (3) Orig. est. flow, 1,400,000 g. p. d. (4) Orig. est. flow, 1,300,000 g. p. d. (5) Good soakage at 200 feet; small flow at 2,450 feet.

400. Talgai West—Supplies at 60 and 90 feet; did not rise in bore.

402. Narada—Water in bores 1 and 3 is brackish. When 7,000 g. p. d. are pumped in No. 4 bore, the W.L. is lowered to 220 feet; this water is slightly brackish, but is fit for domestic use. (Jan., 1911.)

403. Tambo—(1) Inspected July, 1898, *see* table for data; outlet 6.75 feet above surface; cased with 6-inch casing to about 1,600 feet. Altitude levelled (Dec., 1910). (2) Inspected July, 1898, *see* table for data; outlet 3 feet above surface. Altitude levelled (Dec., 1910). (3) Inspected July, 1898, *see* table for data; a well sunk to 60 feet; orig. W.L. 45 feet below surface; cased with 500 or 600 feet of 8-inch casing and 1,950 feet of 6-inch casing. Altitude levelled (Dec., 1910). (4) Inspected Dec., 1910, *see* table for data.

404. Tamworth—Orig. flow, 600,000 g. p. d.

405. Antrim—Former est. flow, 500,000 g. p. d.

406. Tara—(1) Flow in April, 1894, about 250,000 g. p. d.; ceased flowing almost suddenly, 24th July, 1896; W.L. then 1 foot above surface.

406. (1) Flow in April, 1894, about 250,000 g. p. d.; ceased flowing almost suddenly 24th July, 1896; W.L. then 1 foot above surface. (2) Est. flow in Aug., 1893, 450,000 g. p. d.; static head about 41 feet; flow gradually diminished, until 20th March, 1898, when the W.L. suddenly fell to 7 feet below surface. (3) Est. orig. flow, 500,000 g. p. d.; considerable quantity of *inflammable gas* rising; loss of potential, 8 or 9 feet in fifteen months (Oct., 1899). Ceased flowing, date not to hand; depth in 1907, 3,500 feet.

409. Tatala—At 1,607 feet, mica-schist or granite.

410. Telemon—(1) Orig. depth, Dec., 1893, 609 feet; est. flow in 1907, 150,000 g. p. d. (2) Water rapidly corrodes iron casing; est. flow in 1907, 300,000 g. p. d. (3) Orig. depth, May, 1895, 925 feet; est. flow in 1907 (?), 25,000 g. p. d. (4) Est. flow, 600,000 g. p. d. in 1907. (5) On a high ridge; W.L. 4½ feet below surface, April 1897. (6) Est. flow in 1907, 150,000 g. p. d. (7) Est. flow in 1901, 400,000 g. p. d.

Sylvania—A small increase of flow obtained by deepening from 1,042 to 1,297 feet; est. flow in May, 1907, 84,000 g. p. d.

Annadale—Est. flow in 1907, 160,000 g. p. d.

413. Thurulgoona—(3) Water comes up outside casing, and is led from a large well by 3-inch pipes into a drain. (11) Irrigated 600 acres of wheat in 1902.

415. Gidgerah or Moonjaree No. 1—Est. flow after completion, 130,000 g. p. d. Inspected May, 1911, *see* table for data; outlet 3 feet above ground; static test of 4 hours; one water-bed; bore was sunk over 700 feet into bed-rock which was met with immediately after striking the flow; gas in the bore water caused an oscillation in the flow while flushing after the static test.

Eumarrah or Moonjaree No. 2—Est. flow after completion, 124,000 g. p. d. Inspected May, 1911, *see* table for data; 7-inch casing used; static test of 20 hours 57 minutes; no leakage occurred outside of casing until 2 hours after closure, which increased to a steady flow of 4,790 g. p. d. within 6 hours, but ceased 5 minutes after taking off the pressure; a few bubbles of gas, also fine particles of shale noticed in flow; the flush after static test amounted to 194,500 g. p. d.

Goora—Est. flow after completion, 2,500,000 g. p. d. Inspected May, 1911, *see* table for data; outlet 9 feet above surface; static test of 36 minutes; 25 miles of bore drains.

Hazelfield—Est. flow after completion, 2,600,000 g.p.d. Inspected 1911, *see* table for data; first flow at about 1,100 feet; static test of 93 minutes, which caused a leakage of 65,200 g. p. d., but stopped again after reopening the bore; the pressure oscillated for some time with a maximum amplitude of 50 feet head and a period of 1.5 seconds; outlet 6 feet above surface.

416\.

419. Toolebuc—(1) A well sunk for 46 feet. (2) Granite bottom. (3) Granite bottom. (4) Granite bottom. (5) Strata not bottomed. (6) 33-foot well; granite bottom. (7) 46-foot well. (8) 21-foot well flows out at 14 feet below surface into low-level tank.

420. Toorak—(1) Orig. flow, 795,400 g. p. d.; static head, 300 feet; max. H.P., 15.03. (2) Former est. flow, 1,000,000 g. p. d.; static head over 200 feet. (3) Former est. flow, 1,500,000 g. p. d. (4) Former est. flow, 2,000,000 g. p. d. Bores 1 and 2. Cleaned and deepened in 1896.

421. Tower Hill, Yanga—Orig. a good flow; ceased in April, 1906.

422. Tulby—(1) Site flooded.

425. Tullundunna—Last flow at 2,890 feet; very hard sandstone at 2,900 feet; from 2,950 to 3,010 feet sand rock carrying quartz in large quantities; bore "determined" in very hard brown sandstone.

427. Wingera—(1) Orig. W.L. 35 feet below surface. (2) Orig. W.L. about 100 feet below surface.

428. Shirley—(2) Orig. W.L. 60 feet below surface. (3) Orig. W.L. 80 feet below surface. (4) Orig. W.L. at 60 feet below surface.

430. Vindex—(1) Abandoned, 1889. Bores A B C, from G.S.Q. Pub., No. 121 (1898). (5) Supply at 260 feet no good; at 320 feet water rose to 192 feet, at 391 feet to 152 feet, and at finish the W.L. stood at 140 feet.

431. Warbreccan—Water barely drinkable, but suit stock; bubbles of firedamp and drops of brown petroleum perceptible. Inspected Aug., 1899, *see* table.

432. Warenda—(1) Orig. W.L. 79 feet; 7 feet higher in 1907; *limestone* from 187 to 410 feet, and from 1,047 feet to the bottom. (2) Limestone, 184 feet to bottom. (3) Limestone, 186 feet to bottom. (5) Limestone, 565 feet to bottom. (8) Limestone, 315 feet to bottom. (9) Limestone, 177 feet to bottom. (11) Limestone, 60 feet to bottom. (11B) At bottom of water-hole; formed W.L. 3 feet below surface. (12) Flows into bed of waterhole; drowned. (16) Limestone, 172 feet to bottom. (17A) Collapsed; W.L. 1 foot below surface in 1907. (17B) (18) Limestone, 192 feet to bottom. (19), (21A) Quicksands met with.

435. Canning Downs—(3) First water at 50 feet.
Glengallan—Numbers of successful shallow bores.

435. Weelamurra—(1) Flow from 1,540 feet, 173,300 g. p. d.; pressure, over 100 lb.; temp., 114° F. (2) Shaft to 225 feet; bore to 280 feet. In one of the bores 40 feet of hard white *chalk* is said to occur.

436. Wellcamp—A seam of *coal* 11 feet thick, 60 feet below surface.

437. Wellshot—(1, 2, 3) Flow accompanied by much gas, amount apparently less in No. 2 than in No. 1 and 3 bores; temp. of No. 1, 176° F., in Dec., 1893; seven distinct flows of water in No. 3; flow of No. 2 in 1907, 193,800 g. p. d.; of No. 3, 247,400 g. p. d.

439. Westland—

(1) Orig. flow, 69,000 g. p. d.; diminution of flow noticed in 1897. For 18 months from the beginning of 1898 there were great pulsations in the evolution of firedamp, at intervals of a few seconds; now nearly disappeared; temp. stated to have been 6° F. higher. Flow in May, 1897, 19,200 g. p. d. In August, 1899, the bore inspected, *see* table. In 1907 the flow was about 10,000 g. p. d.

(2) Former yield, 90,000 g. p. d.; in May, 1897, the flow diminished to 30,000 g. p. d.; bore yielding about 40 cubic feet of *inflammable gas* per hour (Aug., 1899, when inspected, *see* table); flow diminished est. flow, 20,000 g. p. d. in 1907.

440. Whitula—(1) Soak at 225 feet; drift sand from 316 to 424 feet, sand and water rose to 90 feet; at 1,520 feet W.L. stood at 80 feet below surface. (2) Water a little brackish.

444. Wondoolah—Believed that no further supply was met with below 1,390 feet.

447. Yandilla—A well 6 feet sq.; pump going day and night for three months during great drought did not affect supply; water used to irrigate about 120 acres of land; water did not rise in well when struck; subterranean current perceptible.

448. Henderson—Inspection April, 1896; flow, 2,710,000 g. p. d.. Inspection Feb., 1911, see table for data; flow of 53,000 g. p. d., issuing between 8 and 6-inch casings, not affected by static test of 80 minutes.

. . Cobbrum—Orig. flow, 3,500,000 g. p. d. (flowing 7.25 feet over 6-inch casing). Inspected March, 1911, *see* table for data; bore head badly corroded; small leakage outside the 6-inch casing; visibily increasd to 42,000 g. p. d. during static test of 40 minutes; outlet 3.3 feet above surface.

450. Yarron Vale—Water of inferior potability.

451. Yarromere—Salt water.

452. Yorkshire Downs—Est. flow at 1,190 feet, 260,000 g. p. d.; at 1,249, 720,000; at 1,291, 1,040,000; at 1,379, 1,430,000; and at 1,405 feet, 1,460,000 g. p. d.

Artesian Water. Practically the whole of the western half of the State is an artesian basin, the area estimated to be water-bearing being about 300,000 square miles. The geological formations in which the water occurs are Lower Cretaceous and Trias-Jura. The greatest depth bored (at Eimerah) is 5,045 feet, the shallowest flow being 10 feet deep (Manfred Downs). The aggregate depth bored (August, 1911) is 1,644,440 feet. Total estimated daily flow, 520,299,900 gallons. Total number of bores officially known, 1,388; bores flowing, 758. For Bore Records and Water Analyses, *see tables under* Artesian Bores. For general geological information, *see* G.S.Q. Pub. Nos. 19A, 62, 101, 121, Ann. Rep. Dep. Mines, 1900, and the Ann. Reports of the Hydraulic Engineer (Water Supply Department), *also* (1) The Dead Heart of Australia, by J. W. Gregory, F.R.S., D. Sc.; Lond. John Murray, 1906. (2) Problems of the Artesian Water Supply of Australia, by E. F. Pittman, A.R.S.M. Proc. Roy. Soc. 1907 and Pub. of Geol. Surv. N.S.W. 1908. (3) The Flowing Wells of Central Australia, by J. W. Gregory, D.Sc., F.R.S.; Geogr. Jour. July and Aug. 1911. (4) Our Artesian Waters, by R. S. Symmonds. Gov. Printer, Syd., 1912. (5) Report of the Interstate Conference on Artesian Water Supply (in the Press). (6) Supplementary Reports (separate heading) Nos. 10, 47, 69, 70, 104. (7) North Western Queensland (with Map and Section), G.S.Q.P. 159, p. 10 (1901).

Artesian Water Discovery. *See under* Discoveries.

Artesian Water, Notes on. *See* list *under* Supplementary Reports, Nos. 10, 47, 69, 70, 91, 104.

Arthur's Bores. *See under* Artesian Bores. No. 154.

Arthur's Cr., Far Fanning. *Min.Ref.* Gold (alluvial), *see* 3259.

Asbestos. A general term for fibrous varieties of Hornblende and Serpentine. *See* Hornblende, *var.* Asbestos; Serpentine, *var.* Chrysotile.

MINERAL NOTE: The Hornblende varieties of Asbestos are fibrous forms of either Tremolite or Actinolite, the Serpentine varieties being (*a*) Picrolite, and (*b*) Chrysotile, the latter including (*c*) Amianthus. Picrolite is coarsely fibrous, Chrysotile is silky-fibrous, the latter being the most valuable of all varieties.

GEOLOGICAL NOTE: Found in serpentine, altered sedimentary rocks, and quartz. It occurs in small veins in serpentine at Kandanga, south of Gympie, and at several localities to the north of Rockhampton in a long serpentine belt extending from near Keppel Bay to Marlborough. Large areas exist in both districts which have not been prospected. *See maps*, Pls. 3-11.

USES: Asbestos is used in the manufacture of asbestos slates, mill-board, paper covering, steam packing, boiler covering, cloth, rope, yarn, fireproof paints, fabrics, fibro-cement, &c.

105. ——. Contra Copper Lode, Cloncurry, about 480 miles (by rail) W.byS. of Townsville. *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* G.S.M.

106. ——. Dargalong, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

107. ——. Near Townsville, 858 miles N.W. of Brisbane. *Co.* Elphinstone; *Dist.* **Kennedy North.** *Ref.* Q.G.M.J., vol. 8, p. 528 (1907).

108. ——. (Inferior quality.) Blacksmith's Gully, trib. of Machine Gully, 15 miles S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* L.C.B.

109. ——. *Assoc.with* Chrysocolla and Cuprite, in decomposed rock. *Loc.* Cabbagetree Cr., Princhester, 44 miles N.W. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Assay: See* Cuprite. *Ref.* A.R., p. 5 (1907).

110. ——. Princhester, 44 miles N.W. of Rockhampton (*ante*). *Ref.* G.S.Q. Pub. 190, p. 26 (1904).

111. ——. In serpentine country. *Loc.* Mt. Etna, nr. Johannsen's Caves, 15 miles N.N.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 86, p. 2, (1892).

112. ——. In serpentine rock. *Loc.* Mt. Wheeler, Berserker Ranges, 3 miles E.N.E. of Cawarral, 18 miles N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 70 (1887).

113. ——. Tungamull, 18 miles N.E.byE. of Rockhampton. Emu Park Rail. *Co.* Livingstone (*ante*). *Ref.* G.S.M.

114. ——. Tilpal Station, on coast, 50 miles N.N.W. of Rockhampton. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* B.D. and G.S.Q. Pub. 190, p. 26 (1904).

114A. ——. *Assoc.with* Quartz in Reef. *Loc.* Block 1292 Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* **Wide Bay.** Analysis: Moisture=0·5, Loss on ignition=8·1, Silica (SiO_2)=50·2, Iron Oxide, (Fe_2O_3) =8·2, Magnesia ($Mg O$)=11·0, Lime ($Ca O$)=17·8, Alumina ($Al_2 O_3$=2·3 per cent. *Ref.* A.R., p. 308 (1911).

115. —— (inferior). Mt. Muir, Kilkivan Goldfield, 45 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.M.

116. ——. Wodonga Cr., trib. of Widgee Cr., nr. Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.M.

See also under Hornblende, *var.* Asbestos, 4872.

Asbolane, *syn.* Asbolite, Earthy Cobalt, Cobaltiferous Wad. *Compo.*, Oxides of Iron, Manganese, and Cobalt. *Colour,* dull bluish or brownish black. *H* = 0·5. *Sp.gr.* = 3·4. *Contents* (*max.*), Manganese-dioxide 83 per cent. Cobalt sometimes present up to 32 per cent.

Uses: *See notes under* Manganese and Cobalt.

117. ——. *Assoc.with* Almandine Garnet, Malachite, Ironstone, and Cuprite. *Loc.* Valley, W. of Mt. Eurie, nr. head of Dugald R., about 40 miles N.byW. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

118. ——. *Assoc.with* Cuprite, Malachite, Manganese dioxide, and Garnet. *Loc.* Mountain Home Mine, Mt. Norma, 17 miles S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q.P. 10, p. 15 (1885).

119. ——. *Assoc.with* Manganese dioxide, in small quantities, in clay matrix. *Loc.* Sub. 2 of Portion 1862, Parish of Rolleston, Pittsworth (Beauraba), 36 miles (by rail) S.W.byW. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Assays:*—Mineral and matrix—Cobalt = 0·25 per cent., Manganese dioxide = 0·5 per cent. Wad, without matrix—Cobalt = 5 per cent. (approx.), Manganese dioxide = 10 per cent. (approx.). *Ref.* G.S.M. and A.R., p. 144 (1908).

120. —— in 30 ft. lode. *Loc.* Black Snake Mine, Black Snake, 10 miles S. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.M. and G.S.Q.P. 125, p. 36 (1897).

121. ——. Kilkivan Mineral Field, 48 miles W. of Gympie, N. Coast Line. *Co.* Lennox (*ante*). *Note.*—Said to contain 23 per cent. of Oxide of Cobalt. *Ref.* P.R.S.Q., vol. 4, p. 62 (1887).

122. ——. *Assoc.with* Manganese dioxide and Nickel. *Loc.* Cobalt Lode, Mt. Clara Hills, 1½ miles S. of Mt. Clara Mine, Black Snake, 7 miles S. of Kilkivan. *Co.* Lennox (*ante*). *Assays:* (1) *Undressed Ore*—Cobalt, 4·3 per cent.; Nickel, 1 per cent. (2) *Dressed Ore*—Cobalt, 22·3 per cent.; Nickel, 3·57 per cent.; Manganese, 2·36 per cent.; Iron, 29·13 per cent. (3) *Fair sample of lode*—Cobalt, 7·5 per cent.; Nickel, 2·25 per cent.; Manganese, 18 per cent. *Ref.* G.S.M., G.S.Q. Pubs. 28 (1886), 38 (1887).

123. ——. Mt. Cobalt, Black Snake (*ante*). *Ref.* G.S.M.

124. ——. *Assoc.with* Manganese dioxide, in lode. *Loc.* Pie Cr., 10½ miles S.S.W. of Gympie. *Co.* Lennox (*ante*). *Assay:* Cobalt, 7·2 per cent. *Ref.* A.R., p. 151 (1908).

Asbolite, *syn.* Asbolane, *which see.*

Ascot Downs Bore. *See under* Artesian Bores. No. 205.

Ashe's Bore. *See under* Artesian Bores. No. 185.

Ashington Copper Syndicate, Blackbutt. *Min.Ref.* Copper Pyrites, *see* 2272A; Zinc-Blende, 8173A.

Ashton Bore. *See* Gympie Goldfield *under* Gold Bores.

Ashtonville. *See maps,* Pls. 8, 9, 22, 3 miles N.N.W. of junction of Walsh R. and Boulder Cr., 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line). *Lat.,* 16° 55′ S.; *Long.,* 144° 15′ E. *Min.Ref.* Azurite, *see* 202B; Cerussite, 1216, 1216A; **Copper** carbonate, 1901; Cuprite, 2443A; Galena, 2827A; Ironstone, 5537A; Limonite, 5849; Malachite, 6248; Minium, 6592; Tetrahedrite, 7768.

Ashton Cr., 3 miles E. of Ashtonville. *Min.Ref.* Cerussite, *see* 1216; Copper Carbonate, 1901; Limonite, 5849; Minium, 6592.

Aslockton Bore. *See under* Artesian Bores. No. 227.

Asmus Claim, Mt. Hartley. *Min.Ref.* Cobalt, *see* 1834A; Iron Pyrites, 5023A; Mispickel, 6668A.

Asphaltum, *syn.* Mineral Pitch. *Compo.,* a mixture of different hydrocarbons. *Colour,* pitch black. *Sp.gr.* = 1—1·8.

125. —— in shales. Rosella Cr., trib. of Bowen R., about 60 miles S.W. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Ref.* G.S.Q.P. 4, p. 29 (1879).

Assay fees for testing minerals. *See under* Government Analyst Fees.

Assaying Mineral Samples. The Geological Survey Office undertakes the free examination of minerals for prospectors, but the locality in which the minerals are found must be disclosed, and the samples, if required for fire assays or chemical analyses, must be properly prepared. Particulars and conditions are given in a leaflet, entitled "Testing Samples for Prospectors," obtainable at the Geological Survey Office, the Mines Department, and at the Wardens' offices in mining centres and large towns. *See also under* Gov. Analyst Fees.

Asteria, *syn.* Star Sapphire, *var. of* Corundum, *which see. Note:* This stone is found at Anakie, Central Queensland, and specimens which have been cut make very fine gems.

Atacamite. *Compo.* Hyd. oxy-chloride of copper. *Colour*, shades of green. *Streak*, apple-green. *H* = 3—3·5. *Sp.gr.* = 4—4·3. *Contents* (*max.*), Copper 59 per cent.

126. ——. *Assoc.with* Malachite, Chrysocolla, Dioptase, and Tourmaline, in schist. *Loc.* Weka M.C., Eva Group, 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q.P. 215, pp. 159 and 160 (1908).

126A. ——. *Assoc.with* Gold, Copper (native), Copper Pyrites, Malachite, Chrysocolla Dioptase, Iron Pyrites, Limonite, Gothite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, &c.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q.P. 215, pp. 219-224 (1908).

127. ——. *Assoc.with* Tile ore and Malachite, in schist and slate. *Loc.* Mt. Oxide M.L. (282), Mt. Oxide Group, between Torpedo Cr. and Myally Cr., 109 miles N.W. of Clonncurry. *Co.* Tewinga; *Dist.* Burke. *Assay:* Copper=38·6 %; Gold=19 gr. per ton; Silver=1 oz. 18 dwt. per ton. *Ref.* G.S.Q.P. 215, p. 362 (1908).

128. ——. Mt. Perry Copper Mine, Mt. Perry, 67 miles S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* O.R.

129. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Bornite, Tetrahedrite, Tenorite, Cuprite, Tile ore, Malachite, and Hematite, in quartz and felspar lode. *Loc.* Ruddygore Mine, Arbin oe Cr., Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Cairns-Chillagoe line, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* G.S.Q. Pubs. 69, p. 7 (1891), 119, 39 (1897) and 134, pp. 10 and 11 (1898).

130. ——. Boomerang Lease, Chillagoe Cr., 1 mile W. of Calcifer, 139 miles W.S.W. of Cairns, Cairns-Chillagoe Rail., Walsh and Tinaroo Mineral Fields. *Co.* Lynd (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 51 (1900).

131. ——. *Assoc.with* Azurite and Cerussite. *Loc.* Paisley Lease, Muldiva Silver-Lead Mines, 6 miles S.W.byS. of Almaden, Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 51 (1900).

132. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Tile ore, Malachite, Limonite, and Calcite, in quartz and chloritic schist. *Loc.* Blue Jacket M.L. (632), Mt. Hope Group, 53½ miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 43, 44 (1908).

133. ——. *Assoc.with* Gold, Cuprite, Tile ore, Tenorite, Malachite, Chalcanthite, Iron Pyrites, Limonite, Calcite, and Chalcedony, in kaolinised slate and gossan. *Loc.* Mt. Elliott Copper Mines, Mt. Elliott Group, Maggie's Cr., 68 miles S. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 3-14 (1908).

134. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Chrysocolla, Copper Carbonate, Linarite, Cerussite, Manganese dioxide, Zinc-Blende, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, Garnet. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 82, p. 3 (1892),

135. ——. *Assoc.with* Azurite and Galena, in quartz reef. *Loc.* Rattler Lease (233), Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver=17 dwt. 23 gr. per ton; Lead=trace; Gold=trace. (2) Silver=9 oz. 16 dwt. per ton; Copper=3½ per cent. (3) Silver=22 oz. 17 dwt. 8 gr. per ton. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

136. ——. Nebo Goldfield, 39 miles W.byS. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South; and *Co.* Wodehouse; *Dist.* **Leichhardt.** *Ref.* P.R.S.Q., vol. 4, p. 55 (1887).

137. ——. *Assoc.with* other Copper ores. *Loc.* Peak Downs Copper Mine, Copperfield, 5 miles S. of Clermont, 234 miles (by rail and road) W.byN. of Rockhampton, Clermont-Blair Athol Br. Rail. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* Q.M.

138. ——. *Assoc.with* Halite, in friable sandstone. *Loc.* Moonmera Copper Mines, nr. Moonmera, 20 miles (by rail) S.S.W. of Rockhampton, Mt. Morgan Br. Rail. *Co.* Raglan; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 195, p. 27 (1904).

Atawaina, D'Entrecasteaux Islands, Brit. New Guinea. *Min.Ref.* Sanadine, *see* 7056.

Atherton (Mareeba-Atherton Line, Cairns Rly.), 22 miles (by rail) S. of Mareeba, 68 miles (by rail) S.W.byS. of Cairns. *Lat.*, 17° 17′ S.; *Long.*, 145° 34′ E. *Railway Base* for Herberton and Newellton (Silver Valley) mining centres. *Min.Ref.* Tripolite, *see* 7027.

Atherton Copper Lease (34). Otho Camp, nr. Calcifer. *Min.Ref.* Cuprite, *see* 2432; Malachite, 6226.

Atherton's Mine, nr. Cairns. *Min.Ref.* Cassiterite, *see* 958.

Aubigny Co. Darling Downs Dist.; *see map*, Pl. 12.

Auburn Co. Darling Downs Dist.; *see map*, Pl. 12.

Auburn Falls, Auburn R., 32 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. Geological Note: Country rocks are slates, &c., of Gympie (?) formation, in which there are large quartz lodes carrying gold-bearing mispickel. *See* G.S.Q. Pub., No. 207, for notes.

Auburn Falls Gold Mine (*ante*). *Min.Ref.* Gold, *see* 3630; Mispickel, 6662; Iron Pyrites, 5014, Opal (common), 6971.

Auburn R. Rises in Main Coast Range, 130 miles W.S.W. of Bundaberg. Flows S. and N.E. into Burnett R. 25 miles W. of Gayndah Rail. Stn. Length, about 120 miles. *Lat.*, 25° 40'-26° S.; *Long.*, 150° 30'-151° E. *Min.Ref.* Chlorite, *see* 1428; Gold, 3630, 3631; Iron Pyrites, 5014; Kaolin, 5673; Mispickel, 6662; Opal (common), 6971; Turgite, 7889.

Auckland Hill, Gladstone. *See* Pl. 34. *Min.Ref.* Chloropal, *see* 1470; Ironstone, 5616A; Manganese dioxide, *see* 6458, 6459, 6460; Psilomelane, 7097; Pyrolusite, 7129.

GEOLOGICAL NOTE: Country rocks consist of clay slates, more or less ferruginous, in which Manganese, in the form of Psilomelane and Pyrolusite, occurs as irregular masses and bunches. *See* G.S.Q. Pub. No. 194 for details.

Auckland Point. *See* Auckland Hill.

Augite. *Compo.*, Silicate of alumina, lime, magnesia, and iron. *Colour*, usually greenish-black. *H.* = 5—6. *Sp.gr.* = 3·2—3·5.

139. ——. Big Ben Mine, Herberton, 9 miles S.S.W. of Atherton, Cairns Rail. line, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

140. ——. Wild R. Valley (Upper Herbert R.), Walsh and Tinaroo Mineral Fields. *Cos.* Cardwell, Gunnawarra, and Wairuna; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

141. ——. *Assoc.with* Felspar Crystals, and Magnetite, in basalt. *Loc.* Gt. Basalt Wall, N. of Lolworth Cr., about 48 miles W. of Charters Towers. *Co.* Dalrymple; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 11 (1891).

142. ——. *Assoc.with* Magnetite. *Loc.* Mt. Razorback, Upper Burdekin, 45 miles W. of Cardwell. *Co.* Gunnawarra; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 6 (1891).

143. —— (crystals). *Assoc.with* Chlorite, in sedimentary rocks. *Loc.* Great Monkland Mine (629), Gympie Goldfield, 106 miles N.byW. of Brisbane, N. Coast Rail. *Co.* March; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 52, p. 18 (1889).

144. ——. *Assoc.with* Chabazite. *Loc.* Mt. Drew, 85 miles N.N.W. of Port Moresby, Brit. New Guinea. *Ref* G.S.Q. Pub. 85, p. 16 (1892).

—— **Diallage** (*var.*). *Colour*, greenish. *Lustre*, pearly. *Sp.gr.* = 3·2—3·3. *H.* = 4.

145. ——. Boomerang Lease, 1 mile W. of Calcifer, 133 miles W.S.W. of Cairns, Cairns-Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

146. ——. Calcifer, 133 miles (by rail) W.S.W. of Cairns, Cairns-Chillagoe Rail., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

147. ——. Macrossan Mine, Chillagoe, 139 miles W.S.W. of Cairns, Chillagoe-Cairns Rail., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

148. —— as rock mass. *Loc.* Peak Vale, 18 miles S.S.W. of Clermont, 247 miles (by rail and road) W.byN. of Rockhampton, Clermont line. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* B.D.

Augite. *See also* Asbestos.

Augusta, Maid of Erin Shaft, Victory United Lease No. 33, Eidsvold Goldfield. *Min.Ref.* Anglesite, *see* 13; Gold, 3655; Iron Pyrites, 5020; Redruthite, 7277; Zinc-Blende, 8072.

Aure R., nr. Purari R., Brit. New Guinea. *Min.Ref.* Limestone, *see* 699.

Aurichalcite. *Compo.*, Hyd. carbonate of zinc and copper. *Colour*, green and blue. *Lustre*, pearly. *H.*=2. *Sp.gr.*=3·5—3·6.

149.——. True Blue Mine, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M.

Auriferous Pyrites. *See* Iron Pyrites, Copper Pyrites, Mispickel.

Aurora Borealis Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

—— Cr., 8 miles S.W. of Georgetown, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2744, 2745; Gold, 3716, 3717; Iron Pyrites, 5037, 5038; Pyromorphite, 7140.

—— Cr. and Rocky (between), Etheridge Goldfield. *Min.Ref.* Anglesite, *see* 21B; Cerussite, 1189A1; Galena, 2745A.

—— Reef, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2744; Gold, 3716; Iron Pyrites, 5037; Pyromorphite, 7140.

Austral Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1039.

Australasian G.M. Co.'s Mine, Gympie Goldfield. *Min.Ref.* Anthacite, *see* 1824; Iron Pyrites, 5458.

—— Reef, Northcote, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3761.

Australia Felix Mine, Sandy Cr., Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4035; Iron Pyrites, 5250; Mispickel, 6746.

Australian Beauty, Golden Valley, Croydon Goldfield. *Min.Ref.* Galena, *see* 2710A; Gold, 3520; Iron Pyrites, 4953.

Australites. *See under* Obsidian.

Auteuil Bore. *See under* Artesian Bores. No. 142.

Authoringa Run Bores. *See under* Artesian Bores. No. 146.

Authors' references. *See* References.

Avery's Sub-artesian Bores. *See under* Artesian Bores. No. 423.

Avington Lease Bores. *See under* Artesian Bores. No. 147.

Avis's Lease, Oaks Gold and Mineral Field, Etheridge Goldfield. *Min.Ref.* Cerussite, *see* 1213; Galena, 2812; Gold, 3794.

Avoca Farm (por. 1985), 2 miles E. of Emuvale Rail. Stn. (Killarney line). *Min. Ref.* Coal, *see* 1630.

Avon Downs Bore. *See under* Artesian Bores. No. 305.

Avondale Bore. *See under* Artesian Bores. No. 148.

Ayrshire Co. Gregory North *Dist.*; *see map*, Pl. 20.

Ayrshire Downs, 35 miles N.W. of Winton. *Min.Ref.* Coal, *see* 1642.

—— —— Bores. *See under* Artesian Bores. No. 149.

Azurite. *Compo.*, Carbonate of copper. *Colour*, azure-blue. *H.* = 3·5—4·2. *Sp.gr.* = 3·5—3·8. *Contents* (*max.*), Copper 55 per cent.

150. ——. Argylla Copper M.F. (3073), Argylla Group, Argylla Cr., 40 miles W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.M.

150A.——. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in quartz and quartzite. *Loc.* Federal R.C. (52), Federal Group, Cameron R., 20 miles W.N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 267 and 268 (1908).

151. ——. *Assoc.with* Copper Pyrites, Tile ore, Malachite, and Limonite, in mica-schist, quartzite, and gossan. *Loc.* Magnet M.L. (450), Longamundi Group, Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 284-286 (1908).

152. ——. *Assoc.with* Redruthite, Malachite, Ironstone, Ilmenite, Calcite, Chlorite, and Biotite, in granite, quartz, felspar, and schist. *Loc.* Mavis M.L. (315), Longamundi Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 283 and 284 (1908).

153. ——. *Assoc.with* Copper Pyrites, Cuprite, and Malachite, in ironstone. *Loc.* Contra Copper Lode, ¼-mile S.W. of Gt. Australia Mine, at Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

154. ——. *Assoc.with* Tenorite, Cuprite, and Malachite, in ferruginous quartzite. *Loc.* Ma Foi M.L. (508), Cloncurry Township. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 253 (1908).

155. ——. *Assoc.with* Gold, Native Copper, Cuprite, and Malachite. *Loc.* Homeward Bound Extd. M.C. (331), Homeward Bound Group, Mt. Douglas or Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.M., G.S.Q. Pub. 10, p. 4 (1885), and Pub. 215, pp. 233 and 234 (1908).

156. Azurite. In copper lode. Pumpkin Gully, 12 miles E. of Cloncurry (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 77 (1887).

For further Cloncurry references *see* Nos. 159 to 171.

157. ——. *Assoc.with* Copper Pyrites, Malachite, Cassiterite, Galena, Zinc-Blende, in chlorite. *Loc.* Comet Tin Mines, N. of Ten-mile Cr., nr. Esmeralda Rd., Stanhills Tinfield, between 12 and 24 miles S.E. of Croydon. *Co.* Esmeralda; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

158. ——. *Assoc.with* Malachite, in lode 1 ft. wide in granite country. *Loc.* Left-hand br. of Ten-mile Cr., Stanhills Tinfield (*ante*). *Ref.* B.D.

159.——. *Assoc.with* Redruthite, Malachite, and Limonite, in quartz and schists. *Loc.* Boomerang M.C. (162), Boomerang Group, Cone Cr., 2 miles N.N.W. of Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 99, 100 (1908).

160. ——. *Assoc.with* Copper Pyrites, Tile ore, and Malachite, in gossan, quartz, and schist. *Loc.* Celestial Extd. M.C. 195, Chinaman Group, 2 miles S.S.W. of Mt. Start, 23½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, p. 148 (1908).

161. ——. *Assoc.with* Malachite, Chrysocolla, and Chlorite, in quartzite, quartz, and gossan. *Loc.* Caine's King M.L. 577, Columbian Group, Duck Cr., nr. Mt. Start, 24½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 142 and 143 (1908).

162. ——. *Assoc.with* Copper Pyrites, Tile ore, Malachite, Limonite, in schist and quartz. *Loc.* Comet M.L. 243, Hilda Group, 20 miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, p. 182 (1908).

162A.——. *Assoc.with* Redruthite, Tile ore, Malachite, and Limonite, in quartz and schist. *Loc.* Morning Star M.L. (306), Lady Group, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 199 (1908).

163. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite. *Loc.* Erin-go-Bragh Extd. M.C. (372), McPhail Group, 2 miles N. of Florence R., 31 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215. pp. 77, 78 (1908).

164. ——. *Assoc.with* Copper Pyrites, Tile ore, Malachite, Chrysocolla, Hematite, and Limonite, in slate. *Loc.* Easter Gift M.L. 290, Pioneer Chief Group, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 127-129 (1908).

165. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile ore, Malachite, and Chrysocolla, in gossan, quartz, and quartzite. *Loc.* Captain M.L., Eva Group, 22½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 158, 159 (1908).

166. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile ore, Iron Pyrites, Limonite, and Calcite, in schist, slate, and quartz. *Loc.* Eva M.L. (250), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 152-154 (1908).

167. ——. *Assoc.with* Redruthite, Tile ore, Malachite, and Limonite, in schist, quartzite and slate. *Loc.* Monitor M.L. 419, Monitor Group, Hampden, 44 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 65 (1908).

168. ——. *Assoc.with* Copper Pyrites, Cuprite, and Malachite, in lode traversing porphyry. *Loc.* Mt. Devoncourt M.L. (550), on main br. of Cloncurry R., Monitor Group, 42 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 66-68 (1908).

169. ——. *Assoc.with* Gold, Copper Pyrites, Redruthite, Tile ore, Malachite, and Limonite, in chloritic schist. *Loc.* Pioneer M.L. 229, Diagonal Group, S. side of Duck Cr., nr. Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 132-135 (1908).

170. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Chrysocolla, Iron Pyrites, Limonite, and Tourmaline, in schist, slate, and quartz. *Loc.* Tambourine R.C. (286), Tambourine Group, Duck Cr., 26 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 166 and 167 (1908).

170A.——. *Assoc.with* Redruthite, Tile ore, Malachite, and Limonite, in gossany quartz and schist. *Loc.* Wallaroo M.L. (392), Wee Macgregor Group, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 202-205 (1908).

171. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile ore, Malachite, Chrysocolla, and Limonite, in schist, slate, and gossan. *Loc.* Mighty Atom M.L. (274), Mighty Atom Group, between Six-mile and Copper Mine Crs., Leichhardt R., 42 miles N.W.byW. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 304-306 (1908).

For further Cloncurry references *see* Nos. 205 to 208.

172. ——. *Assoc.with* Malachite. *Loc.* Leon Mine, nr. Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M.

173. —— Azurite. *Assoc.with* Malachite and Psilomelane, in gossan. *Loc.* M.L. 16, Perry Scrub, St. Agnes Cr., Perry R., 15 miles S. of Gin Gin Rail. Stn., Mt. Perry line, 44 miles S.W. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 184, p. 13 (1903).

174. ——. *Assoc.with* Malachite, in lode. *Loc.* Mt. Perry Copper Mine, Mt. Perry, 67 miles S.W.byW. of Bundaberg (Mt. Perry Rail. line). *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

175. ——. *Assoc.with* Malachite, in granite. *Loc.* Queensland Copper Mine, 2 miles S.W. of Wolca, 8 miles N. of Mt. Perry. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885).

176. ——. True Blue Mine, Mt. Perry, 67 miles S.W.byS. of Bundaberg (Mt. Perry Rail. line). *Co.* Bowen (*ante*). *Ref.* G.S.M.

177. ——. *Assoc.with* Copper Pyrites and Malachite, in oxidised ore. *Loc.* Don Jon Bismuth Mine, Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Assay:* Gold=9 gr. per ton; Silver=4 oz. per ton; Copper=7 per cent. *Ref.* A.R., p. 44 (1906).

178. ——. *Assoc.with* Malachite, Limonite, and Göthite. *Loc.* Lakeside, nr. Degilbo, 58 miles (by rail) W. of Maryborough (Gayndah line). *Co.* Cook (*ante*). *Ref.* O.R.

179. ——. *Assoc.with* Malachite. *Loc.* 1 mile N.E. of Biggenden Mine, Mt. Biggenden, 4½ miles W. of Biggenden, 58 miles (by rail and road) W. of Maryborough (Gayndah Rail. line). *Co.* Cook (*ante*). *Ref.* G.S.Q.P. 60, p. 3 (1890).

180. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tenorite, Malachite, Iron Pyrites, Hematite, and Limonite, in lodes in syenitic granite. *Loc.* Calgoa Copper Mines, Thunder Cr., head of Calgoa Cr., 15 miles N.byW. of Kilkivan. *Co.* Lennox; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 207, p. 5-11 (1907).

180A. ——. *Assoc.with* Galena, Cerussite, Massicot, Malachite, and Limonite, in lode. *Loc.* about 5 miles S. of Coalstoun Lakes, 16 miles S.W. of Biggenden Rail. Stn. (Gayndah line). *Co.* Mackenzie; *Dist.* Burnett. *Ref.* A.R., pp. 287, 288, 291 (1910).

181. ——. *Assoc.with* Copper Pyrites, Malachite, and Iron Pyrites, in chloritic rock. *Loc.* Robina (or Mt. Hawick) Copper Mine, 12 miles W.S.W. of Degilbo (Gayndah Rail. line). *Co.* Mackenzie (*ante*). *Assay:* Gold, trace; Silver= 2 oz. 1 dwt. 1 gr. per ton; Copper=1·38 per cent. *Ref.* G.S.Q. Pub. 150, p. 4 (1900).

181A. ——. *Assoc.with* Redruthite, Malachite, Ironstone, Barytes, and Calcite. *Loc.* Burnett Range, nr. Gaeta, about 23 miles N.byW. of Mt. Perry Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* A.R., p. 263 (1910).

182. ——. *Assoc.with* Malachite and Cuprite, in felspathic rock. *Loc.* Marshall Block Lease, Mt. Cannindah, head of Cabbage-tree Cr., br. of Splinter Cr., 13 miles S.W.byS. of Many Peaks Rail. Stn. (Boyne Valley line), 71 miles (by rail and road) S. of Gladstone (North Coast Rail line). *Co.* Yarrol (*ante*). *Ref.* G.S.Q.P. 113, p. 7 (1896).

183. ——. *Assoc.with* Malachite, Cuprite, and Tenorite, in dyke rock. *Loc.* Monument Block Lease, Mt. Cannindah (*ante*). *Ref.* G.S.Q. Pub. 113, p. 8 (1896).

184. ——. *Assoc.with* Gold, Silver, Native Copper, Cuprite, Tenorite, and Malachite, in lode. *Loc.* Mt. Cannindah Mine, Mt. Cannindah (*ante*). *Ref.* G.S.Q.P. 105, pp. 6, 7 (1895), 113, p. 4 (1896), and 143, p. 4 (1899).

185. ——. *Assoc.with* Malachite. *Loc.* Mungai Copper Lodes, 12 miles W. of Mt. Perry. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

186. ——. *Assoc.with* Gold, Tetrahedrite, Cuprite, Malachite, Chalcanthite, and Ironstone, in lodes in gneiss and schist. *Loc.* Arbouin Mines, nr. Nondah Cr., Walsh R., 18 miles W. of Mungana Rail. Stn. (Chillagoe line), **Walsh and Tinaroo Mineral Fields.** *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 134, p. 13 (1898).

186A. Azurite. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in quartz. *Loc.* Malpas's Claim, Pinnacle Cr., br. of Lynd R., 16 miles W. of Fossilbrook, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* A.R., p. 223 (1910).

186B.——. *Assoc.with* Copper Pyrites, Cuprite, and Malachite, in lode. *Loc.* Daintree Copper Mines, 38 miles S.E. of Einasleigh Rail Stn. (Etheridge line). *Co.* Copperfield; *Dist.* Cook. *Ref.* E.O.M.

187. —— (crystals), in gossan. Mt. Molloy Mine, 17 miles S.S.W. of Port Douglas, 22 miles N.N.W. of Mareeba (Cairns Rail. line), Walsh and Tinaroo Mineral Fields. *Co* Dagman; *Dist.* Cook. *Ref.* G.S.M.

188. —— as surface outcrop. Boonmoo, 81 miles (by rail) S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

189. ——. *Assoc.with* Malachite and Cassiterite. *Loc.* Clan Ronald Mine, Eureka Cr., nr. Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 77 (1887) and G.S.Q.P. 125, p. 47 (1897).

189A.——. *Assoc.with* Cuprite, Malachite, Scheelite, and Wolfram, in defined lodes in slate, &c. *Loc.* Parada Mines, 1 mile N. of Parada, 64 miles W.S.W. of Cairns, Walsh and Tinaroo Mineral Field (*ante*). *Ref.* G.S.M.

189B.——. *Assoc.with* Copper Pyrites, Copper Oxide, Malachite, and Cassiterite, in greywacke and slate. *Loc.* Crucible Tin and Copper Mine, Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills (Chillagoe br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, pp. 21, 22 (1883).

190. ——. *Assoc.with* Malachite, Cassiterite, and Ochre. *Loc.* Ironclad Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 119, p. 9 (1897), and G.S.M.

191. ——. *Assoc.with* Cassiterite and Malachite. *Loc.* North Australia Tin Mine, Watsonville (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 77 (1887), and G.S.M.

192. ——. *Assoc.with* Cuprite, Tile ore, Malachite, and Red Ochre, in greywacke and shales. *Loc.* Shaughran Copper Mine, Watsonville (*ante*). *Contents:* Copper =10 per cent. *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

192A.——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Iron Pyrites, Mispickel, Cassiterite, Stannine, Wolfram, Ironstone, Fluorspar, and Chlorite. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 26 (1883), and 119, p. 15 (1897).

193. ——. *Assoc.with* Copper Pyrites, Tile ore, Malachite, and Chalcanthite, in greywacke. *Loc.* Wyatt's Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

194. ——. *Assoc.with* Cuprite, Tile ore, Tenorite, Malachite, Chrysocolla, Magnetite, and Hematite. *Loc.* Boomerang Copper Mine, 1 mile W. of Calcifer, 133 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Field. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 69, p. 8 (1891), and 119, p. 36 (1897), and G.S.M.

194A.——. *Assoc.with* Copper (native), Cuprite, Tetrahedrite, Malachite, Hematite, Manganese-dioxide, and Selenite, in lode. *Loc.* Griffith Lease, Julia Cr., 2 miles S.E. of Mungana Rail Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 5 (1891), and 134 p. 11 (1898).

195. —— (crystals). In breccia, Lady Jane Mine, 1 mile S.E. of Mungana Rail Stn. (Chillagoe line) (*ante*).

196. ——. *Assoc.with* Malachite. *Loc.* 5 miles S. of Koorboora Rail. Stn. (Chillagoe line), 108 miles S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook.

197. ——. *Assoc.with* Copper Pyrites, Cuprite, Redruthite, Malachite, Chrysocolla, and Garnet. *Loc.* Dorothy Mine, Opera Cr., 1½ miles S.E. of Mungana, 150 miles (by rail and road) W.S.W. of Cairns (Cairns-Chillagoe Rail.), Walsh and and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 2 (1891), and P.R.S.Q., vol. 15, p. 51 (1900).

198. ——. *Assoc.with* Cerussite and Atacamite. *Loc.* Muldiva Silver-Lead Mines, 7 miles S.W.byS. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 51 (1900).

198A.——. *Assoc.with* Native silver and Malachite, in slate. *Loc.* Muldiva Silver-Lead Mines (*ante*). *Ref.* B.D. Very beautiful crystals have been found in this mine.

199 ——. *Assoc.with* Copper Pyrites and Malachite. *Loc.* Mungana Copper Mines, 149 miles (by rail) W.S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

200. ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Minium, Galena, Cerussite, Zinz-Blende, Hematite, and Garnet, in gossan, &c. *Loc.* Penzance Mine, nr. Redcap, 3 miles N.E. of Mungana, Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, p. 11 (1898).

201. ——. *Assoc.with* Copper Pyrites, Malachite, and Cerussite, in ferruginous lode. *Loc.* Queenslander Mine, nr. Mt. Redcap (*ante*). *Ref.* G.S.Q. Pub. 134, p. 11 (1898).

201A.——. *Assoc.with* Copper Pyrites, Bornite, Redruthite, Malachite, Hematite, Limonite, Cinnabar, and Jasper, in quartz and calcite. *Loc.* St. George Copper and Coal Mines, Little R., 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mosman; *Dist.* Cook. *Ref.* G.S.Q. Pub. 222, pp. 21-32 (1910).

202. ——. *Assoc.with* Malachite. *Loc.* Fossilbrook, 34 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 19 (1898).

202A.——. *Assoc.with* Redruthite, Tile ore, and Malachite, in quartz lode. *Loc.* Ortona Copper Mines, S. bank of Percy R., 13 miles N.W. of Gilberton, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* G.S.Q. Pub. 219, pp. 17-19 (1909).

202B.——. *Assoc.with* Cuprite, Tetrahedrite, Malachite, Cerussite, and Ironstone, in lodes. *Loc.* Tartana Hill, Bowler Cr., Ashtonville, 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Wrotham; *Dist.* Cook.

——. *See other* Walsh and Tinaroo references, No. 209, &c.

203. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, Zinc-Blende, and Cassiterite. *Loc.* Ballandean Tin Mine, Ballandean, 14 miles (by rail) S. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* B.D.

204. ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, and Zinc-Blende, in quartz. *Loc.* Sel. (24), nr. Sundown Cr., Severn R., 25 miles S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

204A.——. *Assoc.with* Gold, Pyrargyrite, Iron Pyrites, Copper Pyrites, Cuprite, Tile ore, Malachite, Galena, Cerussite, Zinc-Blende, Smithsonite, Ironstone, and Calcite. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120 (1898), and 191 (1904).

205. ——. *Assoc.with* Cuprite, Malachite, and Limonite, in quartz. *Loc.* Ivanhoe M.L. 277, Duchess Group, Burke R., between 60 and 70 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 23, 24 (1908).

206. ——. *Assoc.with* Cuprite and Malachite. *Loc.* Monastery M.L. 467, Mt. Bernie Group, 5 miles W. of Mt. Bernie, 18 miles S.W. of Duchess Group, 79 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* A.R., p. 117 (1907).

207. ——. *Assoc.with* Ironstone and Malachite. *Loc.* Trikelana M.L. (522), Trikelana Group, Burke R., between 60 and 70 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Assay: See* Malachite. *Ref.* A.R., p. 116 (1907).

208. ——. *Assoc.with* Cuprite and Malachite, in schist, quartz, and kaolin. *Loc* Horse Cr. M.L. 220, &c., Horse Cr. Group, 5 miles S.S.W. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 15-17 (1908).

For other Cloncurry references *see* Nos. 150-156, 159-171.

209. ——. *Assoc.with* Cassiterite, Iron Pyrites, Malachite, Limonite, Hematite, Wolfram, Mispickel, Göthite, Penninite, Chlorite, Fluorspar, Websterite, and Topaz. *Loc.* Coolgarra Tin Mines, Return Cr., 9 miles N.N.E. of Mt. Garnet Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

210. ——. *Assoc.with* Cuprite, Malachite, and Wolfram, in quartz. *Loc.* Round Mountain, W. of Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 22, p. 4 (1891).

211. ——. *Assoc.with* Tile ore and Malachite, in lode. *Loc.* P.C., Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

212. ——. *Assoc.with* Malachite and Cassiterite. *Loc.* Gt. Northern Tin Mine, Herberton, 9 miles S.S.W. of Atherton, Cairns Rail., Walsh and Tinaroo Mineral Field (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 77 (1887).

212A.——. *Assoc.with* Tetrahedrite, Malachite, Galena, Mimetite, Hematite, and Limonite, in lode. *Loc.* Mt. Garnet Mine, Return Cr., 136 miles S.W. of Cairns, Cairns-Chillagoe Rail., Walsh and Tinaroo Mineral Fields (*ante*). *Ref* G.S.Q. Pub. 72, p. 5 (1891).

213. Azurite. *Assoc.with* Gold, Silver, Copper Pyrites, Bornite, Cuprite, Tenorite, Malachite, Chalcanthite, Iron Pyrites, Mispickel, Hematite, Magnetite, Minium, Cerussite, and Zinc-Blende, in quartz lodes traversing quartzite and porphyry. *Loc.* Mt. Garnet Mines, Return Cr. (*ante*). *Ref.* G.S.Q. Pub. 134, pp 16-19 (1898).

214. ——. Maybelle Mine, Newellton (Silver Valley), 10 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills, Chillagoe Br. Rail., Walsh and Tinaroo Mineral Fields (*ante*)., *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

See further Walsh and Tinaroo references, No. 186, &c.

214A.——. *Assoc.with* Malachite, in quartz. *Loc.* Federal M.L. (60), Soda Water Cr., Ravenswood Goldfield, 78 miles (by rail) S.W. of Townsville. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* O.R. (1909).

215. ——. Elphinstone Cr., trib. of Burdekin R., Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

215A.——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, and Malachite, in quartz. *Loc.* Venture Reef, Marengo Goldfield, 24 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Assay: See* No. 7490. *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

215B.——. *Assoc.with* Gold, Copper Pyrites, Malachite, and Chalcanthite, in quartz reef, in granite. *Loc.* Continong Mine, Burdekin R., 70 miles W. of Townsville. *Co.* O'Connell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 35, p. 12 (1887), and G.S.M.

216. ——. *Assoc.with* Tile ore and Malachite, in quartz. *Loc.* Coane's Shaft, Stockyard Cr. Silver Mine, Hillgrove Run, Basalt R., 70 miles N.N.W. of Charters Towers. *Co.* O'Connell (*ante*). *Ref.* G.S.Q. Pub. 94, p. 13 (1893).

216A.——. *Assoc.with* Malachite, Cassiterite, Iron Pyrites, Hematite, and Limonite, in quartz and chlorite. *Loc.* M.L., Douglas Cr., Kangaroo Hills Mineral Field, 40 miles S.W. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

216B.——. *Assoc.with* Malachite, Hematite, and Limonite, in lode. *Loc.* Iron Mt., N. of Donnybrook, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 71, p. 10 (1891).

217. ——. *Assoc.with* Cuprite, Malachite, and Limonite. *Loc.* Kallanda, Kangaroo Hills Mineral Field (*ante*). *Assay: See* Cuprite. *Ref.* A.R., p. 106 (1907).

218. ——. *Assoc.with* Malachite. *Loc.* True Blue Lease 161, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

219. ——. *Assoc.with* Malachite, in quartz. *Loc.* Victory Extd. Lease 188, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

220. ——. *Assoc.with* Malachite, Galena, Cerussite, and Manganese-dioxide. *Loc.* Bonnybrook Lease (178), Running R., Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 5½ oz. per ton. *Ref.* G.S.Q. Pub. 71, p. 9 (1891), and 82, p. 4 (1892).

221. ——. *Assoc.with* Galena, Kaolin, Steatite, and Lithomarge, in quartz lode. *Loc.* Hidden Treasure East Lease 166, Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver = 2 oz. per ton; Gold, 2 oz. per ton; Copper, 27·8 per cent.; (2) Silver = 28 oz. per ton; Lead, 7 per cent. *Ref.* G.S.Q. Pub. 82, p. 7 (1892), and G.S.M.

222. ——. *Assoc.with* Atacamite and Galena, in quartz. *Loc.* Rattler Lease 233, Kangaroo Hills Mineral Field (*ante*). *Assays:* Silver = 17 dwt. 23 gr., 9 oz. 16 dwt., and 22 oz. per ton; Copper, 3½ per cent. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

223. ——. *Assoc.with* Malachite. *Loc.* Waverley Leases, Kangaroo Hills Mineral Field (*ante*). *Assay:* Gold = trace; Silver = 3 oz. per ton; Copper = 2·2 per cent.

224. ——. *Assoc.with* Silver, Galena, and Barytes, in quartz. *Loc.* Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* L.B. 1, p. 479 (1883).

224A.——. *Assoc.with* Native Copper, Malachite, and Chrysocolla. *Loc.* Keelbottom Copper Mine, Mt. Keelbottom, 2 miles N.N.E. of Dalrymple, 21 miles N.W.byN. of Charters Towers. *Co.* Wilkie Gray (*ante*). *Ref.* G.S.M. and P.R.S.Q., vol. 4 (1887).

225. ——. *Assoc.with* Cuprite and Malachite. *Loc.* Kennedy Copper Mine, Sandy Cr., br. Burdekin R., 50 miles W. of Townsville. *Co.* Wilkie Gray (*ante*). *Ref.* O.R.

226. ——. *Assoc.with* Cuprite and Tenorite. *Loc.* Kennedy Copper Mine (*ante*). *Ref.* P.R.S.Q., vol. 4, pp. 56, 77 (1887).

227. ——. *Assoc.with* Malachite and Calcite. *Loc.* Emu Plains Silver Field, 3½ miles S. of Emu Plains Stn., 50 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 54, p. 5 (1889).

228. ——. *Assoc.with* Gold and Copper Pyrites, in quartz. *Loc.* True Blue Reef, Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 88, p. 4 (1893).

229. ——. *Assoc.with* Malachite, Iron-Pyrites, and Galena, in quartz. *Loc.* Duffy's Mine, flank of Blue Mt., 9 miles S.byE. of Eton Rail. Stn. (Mackay line), 32 miles (by rail and road) S.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 53, p. 10 (1889).

229A.——. *Assoc.with* Malachite, in quartz and gossan. *Loc.* John Downie Copper Lode, por. 83v, Mia Mia, Cattle Cr., 5 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 229, pp. 36, 37 (1910).

229B.——. *Assoc.with* Copper Pyrites and Malachite, in quartz. *Loc.* Mountain Bull Lode, por. 7v, Mia Mia, Cattle Cr. (*ante*). *Ref.* G.S.Q. Pub. 229, p. 36 (1910).

229C.——. *Assoc.with* Silver, Malachite, and Limonite, in lode. *Loc.* nr. Finch Hatton Rail. Stn. (Mackay line), 38 miles W.S.W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* A.R. 1910, p. 280.

230. ——. *Assoc.with* Copper Pyrites, Malachite, Galena, Cerussite, Iron Pyrites, Mispickel, and Zinc-Blende. *Loc.* Mt. Barker Silver Mine, 3 miles N.W. of Eungella Stn., 33 miles W. of Mirani, Mackay Rail. line. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 3 (1889), 181, pp. 12-17 (1903).

230A.——. *Assoc.with* Gold, Copper Pyrites, Tetrahedrite, Tenorite, Malachite, Galena, and Ironstone, in quartz lode. *Loc.* Pine Vale Copper Mine, Pine Vale Cr., Mt. Spencer Gold and Mineral Field, 6 miles S.W. of Eton Rail. Stn., 29 miles (by rail and road) S.W.byS. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Return:* Copper=270 lb. at £56 per ton; Silver=3 oz. 5 dwt. at 4s. per oz.; Gold=1 oz. 4 dwt. at £4 per oz. *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), 181, p. 19 (1903), and 229, p. 12.

231. ——. *Assoc.with* Malachite and Earthy Hematite, in quartz. *Loc.* O'Brien's Mine, 2 miles W. of Pine Vale Cr. Mine, Pine Vale Cr. (*ante*). *Ref.* G.S.Q. Pub. 53, p. 10 (1889), and 229, pp. 18, 19 (1910).

231A.——. *Assoc.with* Gold, Galena, Copper Pyrites, Cuprite, Malachite, Native Bismuth, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Hematite, and Ironstone. *Loc.* Daisy Bismuth Mine, Mt. Wyatt and Bowen roads, 3 miles S. of Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 57 (1889), and G.S.M.

232. ——. *Assoc.with* Malachite and Limonite. *Loc.* Lady Jane Mine, Eukalunda, Sellheim Mineral Field (*ante*). *Ref.* O.R.

233. ——. *Assoc.with* Copper Pyrites and Malachite, in lode 3 ft. wide, in granite country. *Loc.* Lady Mary Mine, Mt. Wyatt Goldfield, 60 miles S.S.E. of Ravenswood. *Co.* Sellheim (*ante*). *Assays: See* No. 2265. *Ref.* A.R., 1906, p. 74.

233A.——. *Assoc.with* Malachite, in gossan. *Loc.* nr. Burdekin Falls, about 83 miles S.W.byW. of Bowen. *Co.* Sellheim (*ante*). *Ref.* O.R. (1909).

234. ——. *Assoc.with* Cuprite and Malachite, in quartz lode. *Loc.* Peak Downs Copper Mine, Copperfield, 5 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* P.R.S.Q., vol. 4, p. 77 (1887).

234A.——. *Assoc.with* Malachite and Ironstone, in pipe vein. *Loc.* Freedom of Contract No. 1 Mine, Ruby Cr., 6½ miles N.E.byN. of Withersfield (Central Rail. line). *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 81, p. 4 (1892).

235. ——. Western Peak Downs Copper Lodes, 7 miles W. of Copperfield, 10 miles W.S.W. of Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.M.

235A.——. *Assoc.with* Native Copper and Malachite, in epidote-rock. *Loc.* on hill W. branch of Murray Cr., Collaroy, 25 miles N.W. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 141, p. 4 (1891).

235B.——. *Assoc.with* Malachite, in slate. *Loc.* Absolon's M.F. (2417), Royal Prince M.C. (54), Sunbeam M.L. (30), and Wallaroo M.F. (634), Mt. Flora Gold and Mineral Field. *Co.* Killarney (*ante*). *Ref.* G.S.Q. Pub. 181, pp. 10-12 (1903), 228, pp. 19, 20, 43, 45 (1910).

235B1——. *Assoc.with* Copper Pyrites, Malachite, and Hematite, in quartz. *Loc.* Ballyhooley Claim, 5 miles from Mt. Flora Freehold, Mt. Flora Gold and Mineral Field (*ante*). *Assay: See* 2269H. *Ref.* A.R., p. 243 (1910).

235c. Azurite. *Assoc.with* Malachite, in granite. *Loc.* Comet P.P.A. (135), and Robertson's Front Sel. M.F. (1828), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 22, 41 (1910).

235d.——. *Assoc.with* Malachite, Limonite, and Jasper, in gossan in granite and slate. *Loc.* Eastern Sel. M.F. (2755), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, p. 3 (1910).

235e.——. *Assoc.with* Malachite, Hematite, and Manganese-dioxide, in granite. *Loc.* Emperor P.P.A. (320), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, p. 25 (1910).

235f.——. *Assoc.with* Malachite, Hematite, and Mispickel (?), in slate. *Loc.* Fitzgerald's M.F. (1408), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, p. 26 (1910).

235g.——. *Assoc.with* Copper Pyrites, Malachite, Iron Pyrites, and Ironstone, in slate. *Loc.* Isen's M.F. (2642), Mt. Flora Gold and Mineral Field (*ante*). *Assay: See* 2269b. *Ref.* G.S.Q. Pub. 228, pp. 27-29 (1910).

235h.——. *Assoc.with* Copper Pyrites, Malachite, Iron Pyrites, and Hematite, in granite. *Loc.* Iron Duke M.C. (42) and Painted Peak M.F. (1807), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 27, 39 (1910).

235i.——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Malachite, in gossan in slate. *Loc.* Keeley's M.F. (2382), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 29, 30 (1910).

235j.——. *Assoc.with* Copper Pyrites, Iron Pyrites, Malachite, and Hematite, in gossan in slate. *Loc.* Laird of the Hills M.L. (32), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 30, 31 (1910).

235k.——. *Assoc.with* Copper Pyrites, Tile ore, Malachite, Iron Pyrites, Chlorite, Calcite, in slate and granite. *Loc.* MacFadzen's M.F. (1749), Douchang, Flora, Essie, Green Outcrops, and Dozzler Lodes, Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 31-35 (1910).

235l.——. *Assoc.with* Malachite and Chrysocolla, in gossan, in granite. *Loc.* Marjorie M.L. (31), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 35, 36 (1910).

235m.——. *Assoc.with* Redruthite, Malachite, Iron Pyrites, Hematite, and Limonite, in granite. *Loc.* Monarch P.P.A. (116, &c.), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 36-38 (1910).

235n.——. *Assoc.with* Copper Pyrites, Malachite, Iron Pyrites, Pyrrhotite, Hematite, Limonite, and Magnetite, in granite and slate. *Loc.* Rodger's Back Sel. M.F. (1430), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 41, 42 (1910).

236. ——. *Assoc.with* Tetrahedrite and Malachite, in volcanic tuffs and altered sedimentary rocks. *Loc.* Balcomba Copper Mines, Balcomba Range, Mackenzie R., 90 miles W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* B.D.

237. ——. *Assoc.with* Copper ores, in quartz reefs traversing clay slates. *Loc.* Rannes Hill, Gogango Ranges, 30 miles S. of Gogango Rail. Stn. (Central line), 69 miles (by rail and road) S.W. of Rockhampton. *Co.* Pakington; *Dist.* Leichhardt. *Ref.* B.D.

238. ——. *Assoc.with* Malachite and Ironstone, in pipe of ore. *Loc.* Ruby Cr., 8 miles N.N.W. of Anakie Rail. Stn. (Central line), 201 miles (by rail and road) W. of Rockhampton. *Co.* Plantagenet; *Dist.* Leichhardt. *Ref.* B.D.

239. ——. *Assoc.with* Copper Pyrites, Tenorite, Malachite, and Hematite. *Loc.* Mt. Orange Copper Mines, 75 miles S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* P.R.S.Q., vol. 4, pp. 52 and 77 (1887).

239a.——. *Assoc.with* Malachite, in altered slate. *Loc.* Bonser P.P.A. (133), in gully N. of Boothill Cr., 3¼ miles W. of Tierawoomba Homestead, about 50 miles S.S.W. of Mackay. *Co.* Wodehouse (*ante*). *Ref.* G.S.Q. Pub. 28, p. 50 (1910).

240. ——. *Assoc.with* Malachite, in altered sedimentary rocks. *Loc.* Great Pyramid Copper and Silver Mine, near Biarra, 12 miles N. of Esk, 79 miles (by rail and road) N.W. of Brisbane (Brisbane Valley Rail. line). *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 169, p. 6 (1901).

241. ——. *Assoc.with* Cuprite and Malachite, in quartz lode. *Loc.* Seven-mile Diggings, 7 miles S.E. of Nanango, 40 miles N.N.W. of Kannangur Rail. Stn. (Brisbane Valley line). *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 29, p. 2 (1886).

242. ——. *Assoc.with* Copper Pyrites, Marcasite, Iron Pyrites, and Galena, in quartz. *Loc.* Black Watch Reef, Scrub Paddock Diggings, 23 miles N.E. of Nanango. *Co.* Fitzroy; *Dist.* **Burnett.** *Assay:* Gold=4 oz., and Silver=11 oz. per ton. *Ref.* G.S.Q. Pub. 29, p. 3 (1886).

243. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Malachite. *Loc.* Par. of Dixon (por. 140), 13 miles E. of Esk, 70 miles (by rail and road) N.W.byW. of Brisbane, Brisbane Valley Rail. *Co.* Stanley; *Dist.* **Moreton.** *Assay: See under* Copper Pyrites. *Ref.* A.R., pp. 156, 157 (1908).

243A.——. *Assoc.with* Copper (native), Copper Pyrites, Cuprite, Tile ore, Malachite, Iron Pyrites, Magnetite, Hematite, Limonite, and Calcite. *Loc.* Many Peaks Syndicate's Copper Mines, Deception Cr., 58 miles (by rail) S. of Gladstone (Boyne Valley line). *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 150, p. 8 (1900), and 194, p. 28 (1904).

243B.——. *Assoc.with* Copper Pyrites, Cuprite, Bornite, Tenorite, Malachite, Galena, Zinc-Blende, Hematite, Magnetite, Garnet, Chlorite, and Calcite, in lode. *Loc.* Glassford Cr. Copper Mines, Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne Valley line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 150, pp. 5-7 (1900), and 194, p. 28 (1904).

244. ——. *Assoc.with* Malachite, in dyke. *Loc.* Maxwelton Goldfield, 35½ miles S.W. of Gladstone. *Co.* Clinton (*ante*). *Assay:* Copper = 8·50 per cent.; Gold = trace. *Ref.* A.R., p. 111 (1907).

244A.——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Bornite, Cuprite, Tenorite, Malachite, and Ironstone, in crystalline limestone, &c. *Loc.* Mt. Hector Copper Mine, E. side of Dawes Range, 12 miles W.N.W. of Many Peaks Rail. Stn. (Boyne Valley line), 70 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* Q.G.M.J., vol. 4, pp. 174-177 (1903).

245. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Redruthite, Malachite, Iron Pyrites, Zinc-Blende, Mispickel, and Scorodite, in quartz. *Loc.* Chandler's Reef, Norton Goldfield, 32½ miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Assay: See* No. 4269. *Ref.* G.S.Q. Pub. 201, p. 18 (1907).

246. ——. *Assoc.with* Gold, Silver, Malachite, and Mispickel, in quartz, ironstone, and clay. *Loc.* P. Area, No. 56, Diglum Cr., Barmundoo Stn., 28 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 162, p. 9 (1901).

247. ——. *Assoc.with* Malachite and Copper Pyrites, in garnet-rock and limestone. *Loc.* P. Area (?), Diglum Cr., nr. Barmundoo Out-Stn., 20½ miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub 162, p. 9 (1901).

247A.——. *Assoc.with* Bornite, Malachite, and Limonite, in quartz lode. *Loc.* 4 miles from Mt. Bennett, about 30 miles W.S.W. of Gladstone, Langmorn Goldfield. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* A.R., p. 218 (1910).

248. ——. *Assoc.with* Malachite, in quartz. *Loc.* Targinnie, 4 miles N.N.W. of Yarwun, 15 miles (by rail and road) N.W.byW. of Gladstone (North Coast line), Langmorn Goldfield (*ante*). *Assay:* Gold = 19 gr. per ton; Silver = 16 dwt. per ton; Copper = 8·1 per cent. *Ref.* A.R., p. 104 (1907).

249. ——. *Assoc.with* Cuprite and Malachite, in quartz lode. *Loc.* 2 miles W. of Old Diggings, 6 miles S. of Raglan, 4 miles (by rail and road) W.S.W. of Gladstone, North Coast line, Langmorn Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

250. ——. *Assoc.with* Cuprite and Malachite. *Loc.* Iveragh Copper Lode, Iveragh Cr., Boyne R., 20 miles S. of Gladstone. *Co.* Flinders; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

250A ——. *Assoc.with* Copper Pyrites and Malachite. *Loc.* Conachan's Sel., W. of Quarry Cr., 19 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

251. ——. *Assoc.with* other Copper Ores. *Loc.* Great Fitzroy Copper Mine, Mt. Chalmers, 19 miles N.E. of Rockhampton, Yeppoon Rail line. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 216 (1907).

251A.——. *Assoc.with* Copper (native), Cuprite, and Malachite, in epidote-rock. *Loc.* Copper Deposits, Clairview Cr., 12 miles N. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q.P. 141, p. 4 (1898).

252. ——. *Assoc.with* Copper Pyrites, Cuprite, and Iron Pyrites. *Loc.* Steven's Copper Lode, Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 8 (1885).

253. ——. *Assoc.with* Malachite and Magnetite. *Loc.* Kroombit Cr., 5 miles above Kroombit Head Stn., 55 miles S.S.W. of Gladstone. *Co.* Pelham (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

253A. ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Iron Pyrites, Hematite, Magnetite, and Limonite, in gossan lodes. *Loc.* M.L. (262), Kroombit Copper Mines, 4¼ miles E.S.E. of Kroombit Hd. Stn., 56 miles S.S.W. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* Q.G.M.J., vol. 7, p. 98 (1906).

254. Azurite. *Assoc.with* Gold, Silver, Native Copper, Redruthite, Cuprite, Malachite, Iron Pyrites, Ironstone, Molybdenite, and Galena, in breccia and granite. *Loc.* Moonmera Copper Deposits, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 143, p. 47 (1899), 150, p. 2 (1900), and 195, pp. 18-22 (1904).

254A. ——. *Assoc.with* Malachite, in gossan. *Loc.* Mudloo Copper Lease, Marodian Goldfield, 5 miles N.N.W. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Yield: See* No. 6382. *Ref.* G.S.Q. Pub. 179, p. 10 (1902).

255. ——. *Assoc.with* Tetrahedrite, Cuprite, Malachite, and Hematite, in quartz. *Loc.* White Rocks Copper Lease, Marodian Goldfield, 5 miles N. of Kilkivan. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 11 (1902).

256. ——. *Assoc.with* Malachite. *Loc.* Federal P. Area, Kilkivan Goldfield, 48 miles (by rail) W. of Gympie (North Coast line). *Co.* Lennox (*ante*). *Assay:* Gold = 14 gr. and 1 dwt. 12 gr. per ton; Silver = 9 dwt. and 12 dwt. per ton; and Copper = 19·1 per cent. *Ref.* A.R., p. 100 (1907).

257. ——. *Assoc.with* Gold and Malachite, in quartz leader. *Loc.* New Year's Reef, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 2 (1886).

258. ——. Mt. Coora, Black Snake, 8 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.M.

259. ——. *Assoc.with* Malachite and Tile ore, in ferruginous quartz. *Loc.* Mt. Alice, S. of Bullock Cr., nr. Gigoomgan Stn., 35 miles W.S.W. of Maryborough. *Co.* Lennox (*ante*). *Assay:* Gold = 1 dwt., Silver = 4 oz. 13 dwt. per ton; Copper = 12·2 per cent. *Ref.* A.R., p. 112 (1907).

260. ——. *Assoc.with* Copper Pyrites, Cuprite, Redruthite, Tile Ore, and Malachite, in quartz. *Loc.* Teebar Copper Lode, Munna Cr., nr. Clifton Stn., 2 miles S. of Boompa Rail. Stn. (Gayndah line). *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 7 (1890).

261. *Assoc.with* Cuprite and Malachite. *Loc.* Luge-e-nor Copper Lode, Calgoa, Thunder Cr., br. of Calgoa Cr., 15 miles N.byW. of Kilkivan. *Co.* Lennox (*ante*). *Ref.* B.D.

262. ——. *Assoc.with* Copper Pyrites, Malachite, Galena, and Mispickel, in granitic dyke. *Loc.* West Calgoa Lode, Thunder Cr., br. of Calgoa Cr. (*ante*). *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

263. ——. *Assoc.with* Copper Pyrites, Tetrahedrite, Malachite, Galena, Zinc-Blende, Iron Pyrites, and Calcite, in slate, diorite, andesite, syenite, and quartzite. *Loc.* Blue Bell Copper Mine, Amamoor Cr., 19 miles S.S.E. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* Q.G.M.J., vol. 8, pp. 524-526 (1907).

——. Sometimes included under the general term "Copper Ore," *which see.*

——. May also have been referred to indefinitely as Copper Carbonate, *which see.*

Baal Gammon Reef, Palmer Goldfield. *Min.Ref.* Gold, *see* 3682.

—— —— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 882; Garnet, 3100; Tourmaline, 7853.

Babe Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3535.

Back Cr., 14 miles S.S.W. of Innesplain Rail. Stn. *Min.Ref.* Coal, *see* 1782D.

—— Sub-artesian Bore. *See under* Artesian Bores. Nos. 70, 207, 244.

Bailey's Gully, 10 miles E.S.E. of Herbert Cr. Rail. Stn. (Central line). *Min.Ref.* Gold (alluvial), *see* 3396.

Bailey's Sub-artesian Bore. *See under* Artesian Bores. No. 402.

"Baird Rush" or Bairdville, 52 miles N. of Coen. Alluvial gold discovered 1892-3. *Min.Ref.* Gold (alluvial), *see* 3243A.

Baird's Cr., rises near Mt. Leswell and flows W. into the Annan R., about 2 miles W.S.W. of Rossville, Annan R. Tinfield, 26 miles S. of Cooktown. *Min.Ref.* Cassiterite, *see* 776, 777, 800, 805, 806.

Bairdville. *See* "Baird Rush," above.

Bajool, S.E.byS. of Rockhampton. *Min.Ref.* Rhodonite, *see* 7320.

Baker's 4-Mile Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 883; Garnet, 3101.

Baker and Connell's Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Bakerville, 4 miles W. of Watsonville. *Min.Ref.* Biotite, *see* 304; Cassiterite, 841, 842; Hornblende, 4827; Ironstone, 5522; Manganese-dioxide, 6407; Ironstone, 5522; Stannite, 7593; Tourmaline, 7851.

Bakerville Mine, 4 miles W. of Watsonville. *Min.Ref.* Biotite, *see* 304; Cassiterite, 840; Fluorspar, 2657; Garnet, 3099; Ironstone, 5522; Manganese dioxide, 6407; Stannite, 7593; Tourmaline, 7851.

Balaclava Sub-artesian Bore. *See under* Artesian Bores. No. 150.

Balah Bore. *See under* Artesian Bores. No. 224.

Balbou Sub-artesian Bore. *See under* Artesian Bores. No. 441.

Balcomba Copper Mine, Balcomba Range, W. of Rockhampton. *Min.Ref.* Azurite, *see* 236; Calcite, 517; Copper Carbonate, 1951; Malachite, 6340; Redruthite, 7300; Tenorite, 7736; Tetrahedrite, 7776.

Balcomba Range, 24 miles N. of Duaringa Rail. Stn. (Central line). *See maps*, Pls. 10, 11. *Min.Ref.* Azurite, *see* 236; Calcite, 517; Copper, 1853; Copper Carbonate, 1951; Malachite, 6340; Manganese-dioxide, 6449; Nepheline, 6906; Psilomelane, 7093; Redruthite, 7300; Tenorite, 7736; Tetrahedrite, 7776.

Geological Note: The rocks of the district include slates, tuffs, basalt, sandstones, and shales. The slates and tuffs are of Gympie Formation (Permo-Carboniferous), and contain deposits of copper and manganese. They have been covered by a vesicular basalt, which in its turn has been partly covered by sandstones and shales of Desert Sandstone Formation (Upper Cretaceous). Recent alluvial deposits occur along the course of the Mackenzie R. close by. *See* G.S.Q. Pub. No. 155 for details and maps.

Balcomba Stn. (*ante*). *Min.Ref.* Copper (native), *see* 2007; Hyalite, 7017.

Balcooma Goldfield—

Situation: *See maps*, Pls. 16, 17. 80 miles E.S.E. of Georgetown. *Co* Clarke; *Dist.* **Kennedy North.** Centre about *Lat.* 18° 46′ S., *Long.* 144° 47′ E.

Discovery: In 1895. Population: Included in Charters Towers Goldfield.

Proclamation: First (and only one), 27th January, 1897, as follows:—Commencing at south corner of Ringwood Park No. 2 Block; thence by the south-east boundary of that block to the west corner of Ringwood Park Block; thence by the south-western boundary of that block and part of the north-west and south-west boundaries of Gervoise Downs to the north corner of Lucky Downs; thence by the north-west boundary of Lucky Downs to the western watershed of the Burdekin, and by that watershed north-westerly to the point of commencement.

Area: 19,200 acres (30 sq. miles).

Mineral Statistics: *Included in* Other Goldfields; *see tables and diagram*, Pls. 36, 46, 46A, 47.

Mineral Reference: Gold, *see* 3879.

Geological Note: The country rock is granite. Geological Publications: Nil.

Warden: Stationed at Charters Towers.

Inspector of Mines: Stationed at Charters Towers.

Bald Hills, 6 miles S. of Langmorn. *Min.Ref.* Limestone, *see* 677.

—— —— Reef, Norton Goldfield. *Min.Ref.* Copper Pyrites, *see* 2289; Gold, 4266; Iron Pyrites, 5367; Mispickel, 6788; Scorodite, 7375.

Baldie's Bore. *See under* Artesian Bores. No. 332.

Balfour Extd. M.C. (257), Cloncurry. *Min.Ref.* Limonite, *see* 5760; Malachite, 6112; Redruthite, 7219; Tile ore, 2505.

Balgowan, nr. Muldu Rail. Stn. *Min.Ref.* Coal, *see* 1621A.

Ball (L. C.), Assistant Gov. Geologist—

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157. On the Jordan Creek Goldfield, 1901.
159. Annual Progress Report for the Year 1900 (1901).
163. On the Hamilton and Coen Goldfield, 1901.
168. On the Stanton-Harcourt Diggings and the Mount Shamrock Mine, 1901.
170. (with W. H. Rands). On the Burrum Coalfield, 1901.
173. On the Mount Biggenden Gold and Bismuth Mine and Paradise Goldfield, 1902.
175. Annual Progress Report for the Year 1901 (1902).
179. On Yorkey's Goldfield, and the Marodian Gold and Copper Field, 1902.
184. Report of Gold Workings in the Perry Scrub, Burnett District, 1903.
185. Young Australian Gold Mine and Commonwealth Bismuth Mine, Degilbo, 1903.
186. (i.) Late Discovery of Gold near Pratten, Talgai Goldfield; (ii.) Some mines on the Talgai Goldfield; and (iii.) Discovery of Gold at Mount Sturt and Freestone Creek, Warwick District, 1903

Ball (L. C.), Assistant Govt. Geologist—*continued:*

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189. Some Manganese Deposits in the Gin Gin, Degilbo, and Warwick Districts, 1904.
191. Notes on Tin, Copper, and Silver Mining in the Stanthorpe District, 1904.
193. Wet Processes of Copper Extraction, with special reference to Queensland Ores, 1904.
194. Certain Iron Ore, Manganese Ore, and Limestone Deposits in the Central and Southern Districts of Queensland, 1904.
198. Gold, Platinum, Tinstone, and Monazite, in the Beach Sands on the South Coast, Queensland. With Appendixes on the Beach Sands of New South Wales, and on the Physical Properties, Sources, and Uses of Platinum, 1905.
199. Preliminary Report on Recent Discovery of Gold at Oaks View, near Rockhampton, 1905.
201. Black Ridge, Clermont. (i.) Preliminary Report, with Appendices on the State of the Mineral Industry in the Clermont District during 1904 (ii.) Supplementary Notes, 1906.
205. Second Report, Oaks View Gold Mines, near Rockhampton, and Notes on the Mines, Talgai and Thane's Creek Goldfield, 1906.
208. Report on the Norton Goldfield, 1907.
213. Map of the Copper Mining District of Cloncurry on a scale of 6 miles to an inch.
215. Report on the Cloncurry Copper Mining District (Parts I. and II.), 1908.
222. Certain Mines and Mineral Fields in North Queensland: (*a*) Geological Reconnaissance of part of the Mesozoic Coalfield, Cook District; (*b*) Mercury, Copper, and Coal Mines, Little River, Cook District; (*c*) Notes on Coal at Mount Mulligan, near Thornborough; (*d*) The King of the Ranges Tin Mine, Watsonville; (*e*) Geological Sketch Map of Part of the Annan River Tinfield, 1910.
223. The Starcke Goldfield, 1909.
228. Field Notes on the Mount Flora Gold and Mineral Field, 1910.
229. Some Mineral Fields in the Hinterland of Mackay. (i.) Mount Spencer Gold and Mineral Field; (ii.) Eungella Goldfield; (iii.) Black Rock Creek Coalfield, 1910.
232. The Burketown Mineral Field (Silver, Lead, and Zinc Mines), 1911.

Queensland Government Mining Journal—

On Found-at-Last Gold Mine, Gladstone. In vol. 3, pp. 606, 607 (1902).

Annual Notes. In vol. 4, p. 298 (1903).

Report on Tin Deposits in the vicinity of Crow's Nest. In vol. 4, pp. 527-529 (1903).

On late Discovery of Tinstone on Rocky Cr., trib. of Brovinia Cr., Burnett District. In vol. 5, p. 62 (1904).

On reported Gold Find at Scotland Hills, near Gayndah. In vol. 5, p. 123 (1904).

On Cadarga Creek Mines, Gayndah District. In vol. 5, pp. 162, 163 (1904).

Manganese—Mineralogy, Chemistry, etc. In vol. 5, pp. 437-440 (1904).

On Gold Deposits at the Head of the Don River, Central District. In vol. 5, pp. 610, 611 (1904).

On Central Queensland Coal Mining Industry. In vol. 6, pp. 14-17 (1905).

On Sapphire Fields of Central Queensland. In vol. 6, pp. 112-117 (1905).

On the Workings, Mineral Lease (262), Kroombit. In vol. 7, p. 98 (1906).

On *re* Boring for Coal, Callide Cr. Coalfield. In vol. 7, p. 139 (1906).

On Coal Measures near Townsville. In vol. 7, pp. 406-409 (1906).

On Gold, Silver, and Bismuth P. Areas, Mount Langan, Upper Brisbane Valley. In vol. 7, pp. 467-470 (1906).

On Seven-mile (Nanango) Goldfield. In vol. 7, p. 525 (1906).

On Glenalvon Bores, Rosewood. In vol. 8, p. 372 (1907).

On Blue Bell Copper Mine, Amamoor Cr. In vol. 8, pp. 524-526 (1907).

On Asbestos in Queensland. In vol. 8, p. 528 (1907).

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Ball (L. C.), Assistant Govt. Geologist—*continued:*

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On Irvinebank Company's Treatment Works. In vol. 10, p. 529 (1909).

On Diamond Drilling at Mt. Warminster. In vol. 11, p. 231 (1910).

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On Reported Discovery of Gold near Beenleigh. In vol. 11, p. 418 (1910).

On Southern Cross Gold and Scheelite Mine, Hodgkinson Goldfield. In vol. 12, pp. 62, 63 (1911).

On Magnesite on Forrest Gate Farm, Mt. Davidson, near Toowoomba. In vol. 12, p. 174 (1911).

Wolfram and Molybdenite in Queensland. Vol. 12, pp. 504, 564 (1911).

Occurrence of Tinstone in the Burnett District. Vol. 13, p. 107 (1912).

Old Brovinia Goldfield. Vol. 13, p. 111 (1912).

Mines in the parish of Taromeo. Vol. 13, p. 111 (1912).

Coal on the Oakey-Cooyar Line. Vol. 13, p. 158 (1912).

Many Peaks Mine. Vol. 13, p. 209 (1912).

Mt. Holmes Tin Mine. Vol. 13, p. 541 (1912).

Rare Metal Mining in Queensland. Vol. 14, p. 4 (1913).

Wolfram Mines of Mount Carbine. Vol. 14, pp. 63, 130, and 180 (1913).

Kerosene Shale in Queensland. Vol. 14, p. 188 (1913).

The Anakie Sapphire Fields. Vol. 14, p. 233 (1913).

Wyreema Gold Mine, Jordan Creek. Vol. 14, p. 238 (1913).

SUPPLEMENTARY REPORTS: *See* List under separate heading, Nos. 97, 110, 111, 114, 127, 128, 129, 131.

Ballandean, Stanthorpe Mineral Field. *See* Pl. 30. *Lat.*, 28° 49′ S. *Long.*, 151° 54′ E. *See maps*, Pls. 12, 13, 30. *Railway Base* for Tin, Silver, and Copper Mines in the vicinity. *Min.Ref.* Azurite, *see* 203; Cassiterite, 973, 974; Chlorite, 1444; Copper Pyrites, 2187; Galena, 2828; Iron Pyrites, 5103, 5104; Mispickel, 6722, 6723; Orthoclase, 7042; Zinc-Blende, 8098, 8099.

GEOLOGICAL NOTE: The country is composed of slate and mud-rock, in which there are quartz lodes carrying silver in association with Mispickel, Zinc-Blende and Copper Ores. *See* G.S.Q. Pub. No. 58 for notes. *See* Supplementary Report List Nos. 117, 119.

DISCOVERIES: Silver-lead ore was discovered at Ballandean in 1888, but was only proved to be payable in 1897. Tin was found at Ballandean (*Por.* 3w. *Par.* Broadwater) about the end of March, 1872, the first mineral selection being taken up in the following month. Copper was discovered at Sundown early in 1888, and work began in 1898.

Ballia Hill Bore. *See under* Artesian Bores. No. 410.

Ballindalloch Sub-artesian Bore. *See under* Artesian Bores. No. 293.

Ball's Sel. (71), 2 miles S.W. of Tambourine. *Min.Ref.* Coal, *see* 1783.

Ballyhooley Claim, Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235B (1); Copper Pyrites, 2269H; Hematite, 4769A (1); Malachite, 6339A (1).

Balmoral Brick Works, Bulimba Cr., Tingalpa (Murarrie Rail. Stn.). *Min.Ref.* Clay, *see* 1578, 1579; Coal, 1773; Gypsum, 4629.

—— Reef, Castleton, Etheridge Goldfield. *Min.Ref.* Copper Pyrites, *see* 2145; Galena, 2746; Gold, 3718; Iron Pyrites, 5039; Mispickel, 6680.

Balnagowan Stn., 22 miles E. of Rockhampton. *Min.Ref.* Chlorite, *see* 1466; Chromite, 1483; Rhodochrome, 7065.

Balurga Co., Cook Dist. *See map*, Pl. 8.

Bamford Wolfram Mines. *See maps*, Pls. 8, 9, 22. Three miles N.N.W. of Petford (Chillagoe Rail. line). Centre about *Lat.* 17° 21′ S.; *Long.*, 144° 58′ E. *Min.Ref.* Bismuth (native), *see* 336A, 337; Bismuthinite, 368; Bismutite, 390; Copper Pyrites, 2166, 2167; Galena, 2785, 2786; Iron Pyrites, 5069-5071; Mispickel, 6699; **Molybdenite,** 6834, 6835; Molybdite, 6871; Scorodite, 7367; Scheelite, 7347; **Wolfram,** 7958; Zinc-Blende, 8084.

GEOLOGICAL NOTE: The country rock is greisen, with quartz porphyry (or a much altered quartose grit) and granite in the vicinity. The wolfram occurs irregularly in the greisen, usually in a quartz matrix, and nearly always in association with molybdenite and native bismuth.

DISCOVERY: First record is of a lease in 1892, but discovery must have been earlier than that year.

STATISTICS: Included in Herberton Returns.

Ban Ban Station, on Barambah Cr., 12 miles S.E.byE. of Gayndah Rail. Stn. *Min.Ref.* Copper Pyrites, *see* 2139A; Galena, 2730A; Gold, 3627, 3628A; Iron Pyrites, 5012A; Malachite, 6203; Serpentine, 7379; Zinc-Blende, 8071A, 8071B.

Ban Ban Lakes. *See* Coalstoun Lakes.

Ban Ban Zinc Lode, 20 miles S. of Biggenden. *Min.Ref.* Zinc Blende, *see* 8071B. *See* Supplementary Report List, No. 131.

Banana Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4497.

Bancroft's House (bore near). *See* Burpengary Bore *under* Coal Bores.

Band of Freedom, Woodville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3764.

Band of Hope Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2865; Gold, 3882; Iron Pyrites, 5146.

—— —— Mine, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3804.

Bando Bores. *See under* Artesian Bores. Nos. 4, 151, 152.

—— Co. Warrego Dist. *See map*, Pl. 18.

Bangall Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 40.

Bania Range (Mt. Flori). *Min.Ref.* Gold, *see* 3660.

Banjo Copper M.L. (590), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1508; Copper (native), 1982; Copper Pyrites, 2095; Iron Pyrites, 4928; Limonite, 5789; Malachite, 6149; Redruthite, 7247; Tile ore, 2525.

Bank of England Lease, Far Fanning. *Min.Ref.* Gold, *see* 3990.

Banks's Bore. *See under* Artesian Bores. No. 170.

—— Co. Cook Dist. *See map*, Pl. 8.

—— Island, Torres Strait. *Min.Ref.* Gold, *see* 3824A; Silver, 7468A.

Banks and Cabbage-tree Crs. (between), Brisbane R., 8 miles N. of Brisbane. *Min.Ref.* Chromite, *see* 1477.

Banner 18 S. Mine, Golden Gate, Croydon Goldfield. *Min.Ref.* Gold, *see* 3506.

—— of Freedom, 14 S. United Mine, Golden Gate, Croydon Goldfield. *Min.Ref.* Gold, *see* 3506.

—— Reef (*ante*). *Min.Ref.* Gold, *see* 3514; Limonite, 5801.

—— M.L. (33), Mt. Flora G. and M. Field. *Min.Ref.* Malachite, *see* 6339B.

Banner Reef, Barmundoo Goldfield. *Min.Ref.* Gold, *see* 4231A; Iron Pyrites, 5352B.

Bantam Claim, Black Ridge, Clermont. *Min.Ref.* Coal (bands), *see* 1660; Gold (alluvial), 3300.

Banty Bore. *See under* Artesian Bores. No. 152.

Bar-of-Soap Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 884.

Barambah Cr., rises in Bunya Mts. 50 miles N. of Toowoomba, flows N. into Burnett R., 4 miles N.E. of Gayndah. Length, about 120 miles. *Lat.*, about 25° 30′-26° 50′ S.; *Long.*, about 151° 40′-152° E. *Min.Ref.* Gold, *see* 3627; Malachite, 6203.

GEOLOGICAL NOTE: The rocks in the neighbourhood of Barambah consist of slates, &c., belonging to the Gympie Formation (Permo-Carboniferous), with granite a few miles away to the east and west. *See* G.S.Q. Pub. No. 217 (*map*).

Barbara Bore. *See under* Artesian Bores. No. 211.

Barcaldine Div. Bd. Bores. *See under* Artesian Bores. No. 115.

—— Downs Run Bores. *See under* Artesian Bores. No. 153.

—— Meat Pres. Co. Bore. *See under* Artesian Bores. No. 155.

—— North and South Districts Bores. *See under* Artesian Bores. Nos. 154-156.

—— Rail Stn. Bore. *See under* Artesian Bores. No. 5.

Barclay Downs Lease Bores. *See under* Artesian Bores. No. 157.

Barcoo River, nr. Blackall Rail. Stn., Central line. *Min.Ref.* Opal (precious), *see* 6952.

—— Co., Mitchell Dist. *See map*, Pl. 18.

—— Reef, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4047; Ironstone, 5551.

Barcoorah Lease Bores. *See under* Artesian Bores. No. 158.

Barium (Ba). *Atom. Wt.* = 137·37. *Sp.gr.* = **3·6.** *Colour,* silver-white. Soft. *Minerals:* *See* Barytes, Harmotome, Witherite.

USES: The sulphate (Barytes), when free from iron stains, is used as a white pigment, and is said to improve the quality and colour of white lead and zinc white, when mixed with these oxides in certain proportions. It is also used to increase the weight of leather and paper, in the former case simply being an adulterant. The carbonate (Witherite) is used in sugar refineries and in the manufacture of plate glass.

Baree (about ¼-mile from), 23 miles S.S.W. of Rockhampton, Central Rail. line. *Min.Ref.* Copper Pyrites, *see* 2296; Gold, 4317; Silver, 7528.

Barenya Run Bores. *See under* Artesian Bores. No. 159.

Barker's Lease, Grass-tree Goldfield. *Min.Ref.* Gold, *see* 4109.

Barkly Tableland, about 146 miles W.byN. of Cloncurry. *Min.Ref.* Sardonyx, *see* 1403. Centre—about *Lat.* 19° 30′ S.; *Long.* 138° E.

GEOLOGICAL NOTE: The tableland consists of Tertiary limestone, resting on slates, limestone, &c., belonging to the Devonian System. *See* G.S.Q. Pub. 159 for notes.

Barklyite. *Sub. var.* of Ruby. *See* Corundum.

Barmoya Sub-artesian Bore. *See under* Artesian Bores. No. 83.

Barmundoo (Tableland) Goldfield. *See maps,* Pls. 2, 3, 4, and 34.

SITUATION: 28 to 40 miles S.W.byS. and S.byW. of Gladstone. *Cos.* Clinton and Raglan; *Dist.* Port Curtis. Centre—about *Lat.* 24° 16′ S.; *Long.* 151° 1′ E.

DISCOVERY: 1887. POPULATION: 80 (estimated, 1909).

PROCLAMATION: First gazetted 20th July, 1894; last alteration 26th July, 1900, as follows:—Commencing at the north-west corner of Barmundoo, portion 311, and bounded thence by the west boundary of that portion and the west boundary of a proposed reserve south of Futter's Creek, by that creek upwards about two miles and three-quarters in a straight line; thence by a line east to Iffley Creek, by Iffley Creek downwards to the west side of the road leading through portions 540, 1v, and 25v, parish of Wietala, by that road south-easterly to the north-west boundary of portion 3v, by that boundary south-westerly to the watersheds forming the heads of Portentia, Living, Booreeco, and Diglum Creeks, by that watershed westerly to a point fifty chains west from the boundary of the leased half of Barmundoo Run; thence south four miles; on the south by a line bearing west ten miles; on the west by a line bearing north ten miles; on the north by a line bearing east to the range forming the western watershed of Takilberan Creek, and by that watershed north-easterly to the point of commencement

AREA: 161,900 acres (253 sq. miles).

MINERAL STATISTICS: *Included in* "Other Goldfields," *see tables and diagrams,* Pls. 36, 46-46A, 47.

MINERAL REFERENCES: **Gold** (alluvial), *see* 3373; (reef), 4231A, 4232-4240; Silver, 7514; Lead (galena), 3036-3038; Copper (copper pyrites), 2281; Zinc-Blende, 8179-8181; Iron (iron pyrites), 5352B, 5353-5357; (mispickel), 6783.

GEOLOGICAL NOTE: The country is made up of granite, limestone, and altered sedimentary rocks. Where limestones occur near the granite, garnet-rock has been formed, and in which there are several copper-bearing lodes. *See* G.S.Q. Pub. 162 for details.

GEOLOGICAL PUBLICATIONS: Report—No. 58 (1890), and 162 (1901). *See under* Geol. Sur. Pub. List for title.

WARDEN: Stationed at Gladstone. INSPECTOR OF MINES: Stationed at Rockhampton.

REPORTS: Inspector's and Warden's, monthly (usually), in Q.G.M. Jour.; annually in A.R.D.M.

Barmundoo Head Station, 28 miles S.byW. of Gladstone. *Min.Ref.* Azurite, *see* 246, 247; Chert, 1413A; Epidote, 2599; Garnet, 3139, 3161; Gold (alluvial), 3374, (reef), 4244, 4245; Ironstone, 5617; Malachite, 6350, 6351; Mispickel, 6784; Silver, 7515, 7516; Wollastonite, 8045.

—— Run (Crow's Cr.), (*ante*). *Min.Ref.* Gold, *see* 4241-4243; Hematite, 4779; Iron Pyrites, 5358; Mispickel, 6785; Zinc-Blende, 8184.

Barossa Silver Lease, Silverfield. *Min.Ref.* Anglesite, *see* 19; Galena, 2774; Zinc-Blende, 8081A.

Barron Falls, 9 miles W.N.W. of Cairns. *Co.* Nares; *Dist.* Cook. *Lat.*, about 17° 10′ S.; *Long.*, about 145° 45′ E.

GEOLOGICAL NOTE: The rocks at the Falls are quartzites and other altered sedimentary rocks. Probably a north and south fault along the coast at Cairns has thrown down the country to the east (now covered by the ocean) and the difference in height between the two faulted portions has produced falls near what is now the mouth of the river. In the course of ages these falls have been weathered backwards to form the present gorge of the Barron River.

Barrow R., 5 miles from Tolga Rail. Stn. (Cairns line). *Min.Ref.* Bismutite, *see* 396; Cassiterite, 959; Gold (alluvial), 3218; Wolfram, 7973.

Barry's Bore. *See under* Artesian Bores. No. 189.

Bartle Bay, Brit. New Guinea. *Min.Ref.* Gold (alluvial), *see* 3420.

Bartle Frere Diggings, 11 miles N.W. of Geraldton. *Min.Ref.* Gold (alluvial), *see* 3217.

Barwidgie Sub-artesian Bore. *See under* Artesian Bores. No. 381

Barytes. *Syn.* Heavy spar. *Compo.*, Sulphate of barium. *Colour*, usually white. *H.* = 2·5—3·5. *Sp.gr.* **4·3—4·7.** *Contents* (*max.*), Barytes 65 per cent.

MINERAL NOTE: Barytes occurs commonly associated with ores of copper, lead, gold, and silver, and with quartz and calcite. Very pure Barytes is found in a lode deposit at Running Creek, north of Kilkivan, but of the many other places where it occurs nothing is known of its extent or quality. For uses, *see note under* Barium.

264. ——. Maxwellton Stn., Alick Cr., 25 miles W. of Richmond. *Co.* Rupert; *Dist.* **Burke.** *Ref.* G.S.M.

264A.——. "Florence," about 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.M.

265. ——. *Assoc.with* Iron Pyrites, in altered slate. *Loc.* Gaeta Goldfield, 30 miles N. of Mt. Perry. *Co.* Bowen (should be Yarrol); *Dist.* **Burnett.**

266. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Galena, and Zinc-Blende, in quartz. *Loc.* Potosi Copper Lode, 6 miles W. of Mt. Perry, 73 miles (by rail and road) S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and G.S.M.

266A.——. *Assoc.with* Redruthite, Malachite, Azurite, Ironstone, and Calcite. *Loc.* Burnett Range, nr. Gaeta, about 23 miles N.byW. of Mt. Perry Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* A.R., p. 263 (1910).

267. ——. Dargalong Silver Mines, Dargalong, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

268. ——. Girofla Mine, nr. Mungana Rail. Stn. (Chillagoe line), 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

269. ——. Tate R., Walsh and Tinaroo Mineral Fields. *Cos.* Lynd, Bolwarra, Walsh; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

269A.—— (massive). Copperfield R., about 3 miles S.W. of Oak Park Cattle Stn. Homestead, about 52 miles S.byE. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy; *Dist.* Cook. *Ref.* E.O.M.

270. ——. Old Mud Springs, 8 miles S.E. of Winton. *Co.* Ayrshire; *Dist.* **Gregory North.** *Ref.* G.S.M.

271. —— (stalactitic). Herbert R., Walsh and Tinaroo Mineral Fields. *Cos.* Cardwell, Gunnawarra, and Wairuna; *Dist.* **Kennedy North.** *Ref.* Q.M.

272. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, and Zinc-Blende, in quartz and calcite. *Loc.* Carrington's United Mine, Ltd. Lease, in Lion Reef, Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* W.C.T.

273. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Old Identity Reef, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 36 (1887).

274. ——. Silver Wave Mine, Ravenswood Goldfield, 78 miles S. of Townsville, Gt. Northern Rail. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* Q.M.

275. ——. *Assoc.with* Silver, Azurite, and Argentiferous Galena, in quartz reef. *Loc.* Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction (Gt. Northern line), 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* L.B. 1, p. 479 (1883).

276. ——. *Assoc.with* Native Silver. *Loc.* King Solomon II. Mine, Emu Plains Silver Field, E. bank of Bowen R., 3½ miles N.E. of Emu Plains Stn., 50 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.M.

277. ——. Oxford Downs, 57 miles S.S.W. of Eton Rail. Stn. (Mackay line), 80 miles (by rail and road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* **Leichhardt.** *Ref.* Q.M.

278. ——. Corona Stn., 60 miles N.W. of Longreach, on Central Rail. Line. *Co.* Musgrave; *Dist.* **Mitchell.** *Ref.* B.D.

279. ——. *Assoc.with* Copper Ores. *Loc.* Gt. Fitzroy Copper Mine, Mt. Chalmers, 19 miles N.E. of Rockhampton, Yeppoon Rail., Cawarral Goldfield. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 216 (1907).

280. ——. *Assoc.with* Silver, Cuprite, Tenorite, Malachite, Cerussite, Iron Pyrites, and Zinc-Blende. *Loc.* Mt. Warminster Copper-lead Mine, 20 miles N.E. of Rockhampton, Yeppoon Rail., Cawarral Goldfield. *Co.* Livingstone (*ante*). *Ref.* B.D. and G.S.M.

281. ——. Listowell Downs, nr. Churchill, 65 miles N.E. of Adavale. *Co.* McKinlay; *Dist.* **Warrego.** *Ref.* G.S.M.

282. —— (radiated). 30 miles W. of Milo Stn., 40 miles W.N.W. of Adavale. *Co.* McKinlay (*ante*). *Ref.* G.S.M.

282A.——. As irregular veins and masses. *Assoc.with* quartz. *Loc.* Tweed's Selection, Calico Creek, 5¾ miles S. of Gympie. *Par.* Woonga; *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* B.D.

283. —— In large lode. In Gorge 3 miles W. of Amamoor Cr., 35 miles W. of Gympie. *Co.* Lennox (*ante*).

284. —— In large lode. Cutlog Cr., ½-mile above junction with Running Cr., 25 miles N.W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

285. —— In lode. Miva Cr., off Munna Cr., 4 miles N.W. of Miva (Rail. Stn.), 47 miles (by rail and road) S.W. of Maryborough, Kilkivan Br. Rail. *Co.* Lennox (*ante*). *Ref.* B.D. *Analysis:* Barium sulphate, 92·4 per cent.; Silica, 7·2 per cent.; Iron oxide and Alumina, 0·6 per cent.; Lime and Magnesia, *nil.*

286. —— As White crystalline masses in lode. Ogilvie's Sel., Running Cr., Gigoomgan Stn., 35 miles W.S.W. of Maryborough. *Co.* Lennox (*ante*). *Analyses:* Barium Sulphate = 92·4 %; Silica, 7·2 %; Iron Oxide and Alumina, 0·6 %. *Ref.* A.R., p. 343 (1911).

Basalt Cr. Bore. *See under* Artesian Bores. No. 340.

Basalt Hill Diggings, nr. Withersfield. *Min.Ref.* Garnet, *see* 3135; Gold, 3364; Hyacinth, 8238; Magnetite, 6030; Tourmaline, 7866; Zircon, 8238.

Basalt River. *See maps,* Pls. 8, 9. Rises in Great Dividing Range, flows E.N.E. into Burdekin R., 45 miles N.W. of Charters Towers. Length, about 100 miles. *Min.Ref.* Azurite, *see* 216; Cerussite, 1231; Copper Carbonate, 1920; Limestone, 656; Malachite, 6294; Tile ore, 2564.

Basaltic Hornblende. *Var. of* Hornblende, *which see.*

Bastet's Coal M.L. (36), Clermont Coalfield. *Min.Ref.* Coal, *see* 1665.

Bat Guano. *See* Guano.

Batavia R., nr. Moreton Tel. Stn., Cape York Peninsula. About *Lat.* 11° 58′ S. *Long.,* 142° E. Alluvial gold discovered by an aboriginal named Pluto in October, 1910. *Min.Ref.* Gold, *see* 3243C; Ironstone, 5520, 5535.

GEOLOGICAL NOTE: The rocks belong to the Desert Sandstone Formation (Upper Cretaceous), in which, near Weipa at the mouth of the river, there is a deposit of pisolitic iron ore. *See* G.S.Q. Pub. No. 180 for notes.

Bath Cr., "Venus," Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3355.

Batteries (crushing) in Queensland. *See* Crushing Mills, *under* Gold, Tin.

Battery Well, Black Ridge, Clermont Goldfield. *Min.Ref.* Halloysite, *see* 4661.

Battista Menines Claim, Charleston, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3723A; Iron Pyrites, 5043A.

Bauhinia Bore. *See under* Artesian Bores. No. 324.

—— Co., Leichhardt Dist. *See map*, Pl. 10.

—— M.C. (347), Dobbyn Group, Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2105; Limonite, 5807; Malachite, 6166; Redruthite, 7258.

Bauxite. *Syn.* Beauxite, *which see.*

Baynes Bros'. Works, Queensport. *Min.Ref.* Coal, *see* 1771A.

B.B. Extd. Mine, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4033.

B.B. Reef, McLeodsville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3713; Hematite, 4706; Iron Pyrites, 5034.

Beach's Bore. *See under* Artesian Bores. No. 229.

Beach Range, spur of MacPherson Range, border of N.S.W. *Min.Ref.* Opal (common), *see* 6996; Tripolite, 7033.

287. **Beach Sand,** Johnstone R., nr. Geraldton, 130 miles N.W. of Townsville. *Co.* Nares; *Dist.* **Cook.**

Analysis: (Sample concentrated to one-fifth orig. bulk).

	Per cent.		Per cent.
Silica	7·59	Lime	0·79
Titanium oxide ...	44·59	Magnesia	1·16
Zirconium oxide ...	1·06	Cerous oxide ...	0·46
Thorium oxide ...	0·23	Phosphoric acid ...	0·41
Alumina	1·46	Niobic oxide ...	0·78
Yttria	0·10	Tantalic oxide ...	
Ferric oxide ...	1·24	Moisture	0·80
Ferrous oxide ...	36·38		
Manganese oxide ...	2·79		99·89
Copper oxide ...	0·05		

Ref. G.S.Q. Pub. 196, p. 12 (1905).

Beach Sands, *see under* Gold, Magnetite, Monazite, Tin, and Zircon.

Beacroft's Workings, Sundown Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1029; Hornblende, 4831; Iron Pyrites, 5119; Mispickel, 6729; Scorodite, 7371; Zinc-Blende, 8102.

Beaconsfield Co., Burke Dist. *See map*, Pl. 20.

—— Mine, Northcote, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3754.

—— Mine, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4017; Iron Pyrites, 5238.

—— Mine, Thanes Cr. Goldfield. *Min.Ref.* Gold, *see* 3871.

—— Run Bores. *See under* Artesian Bore. No. 160.

—— Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1040; Chlorite, 1447; Wolfram, 8006.

Beamish's Nos. 1 and 2 Claims. *See under* Granite Castle Lode.

Bearaway Gully, Starcke Goldfield. *Min.Ref.* Gold (alluvial), *see* 3200B.

Beaton's Sel. (68), 6 miles S.E. of Beenleigh Rail. Stn., South Coast line. *Min.Ref.* Gold, *see* 4223; Iron Pyrites, 5349; Mispickel, 6779.

Beatrice R., Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

Geological Note: The oldest rock is granite, which is partly covered by a sheet of basalt. Between the two formations alluvial gold-bearing deposits occur which have been worked to some extent. *See* G.S.Q. Pub. No. 157 for notes.

Beattie's Mine, Kangaroo Hills Mineral Field. *Min.Ref.* Magnetite, *see* 6015; Smithsonite, 7570.

Beaudesert, 47 miles (by rail) S.byE. of Brisbane, South Coast line. *Lat.*, 28° 1′ S. *Long.*, 153° 2′ E. *See maps*, Pls. 6, 7. *Min.Ref.* Chalcedony, *see* 1360; **Coal,** 1778-1790A; Tripolite, 7033A, 7033B.

Geological Note: The rocks in this district belong to the Walloon Formation (Trias-Jura). They consist of sandstones, shales, and thin seams of coal, with interbedded sheets of basalt. *Coal seams* occur in several localities, principally at Palem Cr., Widgee Cr., and Mt. Lindsay.

The general *quality of the coal* may be gauged from the following mean analysis:—Moisture, 5 per cent., vol. hyd. carbons, 33 per cent.; fixed carbon, 45 per cent.; ash, 17 per cent. (with a range between 11 per cent. and 25 per cent.). Estimated calories = 6802. Coal slightly cokes, ash being pink.

Quantities of Coal.—Probable quantities in seams of 3 ft. or more in thickness amount to 28,000,000 tons, an amount which might be considerably reduced in actual working, but, on the other hand, might be greatly increased when the measures are more thoroughly prospected.

See G.S.Q. Pub. No. 225 for details and map. *See also* Supplementary Report List, No. 151.

Beaudesert Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 161, 343.

Beaufort Co., Kennedy South Dist. *See map*, Pl. 14.

—— Seam (Clyde Colliery), Burrum Coalfield. *Min.Ref.* Coal, *see* 1806.

Beaumont Reef, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4011A.

Beauxite. *Syn.* Bauxite. *Compo.*, Hydrate of Alumina. *Colour*, usually red, from presence of iron oxide. Earthy or granular. *Sp.gr.* = 2·5. *Contents* (*max.*), Alumina 73·9 (= Aluminium 39 per cent.).

Uses: Beauxite is the important source of metallic aluminium. It is also used in the production of alum, and as a refractory material in furnace linings.

Geological Note: This mineral is found in decomposed basalt at Crow's Nest, N.N.E. of Toowoomba. Although it is known at other places, very little information is available concerning it, no attention having been paid to its occurrence.

288. ——. Cooranga Stn., nr. Dykehead Stn., 20 miles W.S.W. of Gayndah Rail. Stn., 110 miles (by rail and road) W. of Maryborough. *Co.* Newcastle; *Dist.* **Burnett.** *Ref.* L.C.B.

289. —— (ferruginous), in decomposed granite. *Loc.* Plainby, 6 miles W. of Crow's Nest Rail. Stn., 40 miles (by rail and road) W.byN. of Toowoomba. *Co.* Cavendish; *Dist.* **Moreton.**

290. ——. Cania Road, 3½ miles S. of Kroombit Stn., 60 miles S.W. of Gladstone. *Co.* Pelham; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 194, p. 27 (1904).

Beazley's Tunnel, Star R. Mineral Field. *Min.Ref.* Cerussite, *see* 1259.

Bedford's Reef, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 4164; Ironstone, 5596.

Bedourie Bore. *See under* Artesian Bores. No. 6.

—— Stn., 160 miles S.W. of Rockhampton. *Min.Ref.* Coal, *see* 1698.

Bee Cr., junction of Hail Cr., W.byS. of Mackay. *Lat.*, 21° 50′ S. *Long.*, 148° 35′ E. *Min.Ref.* Coal, *see* 1700-1701.

Geological Note: The rocks of this locality consist of shales, sandstones, &c., belonging to the Upper Bowen (= Dawson-Mackenzie) Formation (Permo-Carboniferous), and are coal-bearing. The seams are well defined and of workable thickness, and the coal is anthracitic. *See table under* Coal Analyses. *See* G.S.Q. Pubs. Nos. 39, 53, 92, and 200 for details. *See also* Supplementary Report List No. 128.

Bee Cr. Diggings. *See under* Eungella Goldfield.

Beechal Lease Bores. *See under* Artesian Bores. No. 162.

Beehive Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4498.

Beel's Bore. *See under* Artesian Bores. No. 235.

Beenleigh. *See maps*, Pls. 6, 7. 27 miles S.E. of Brisbane (South Coast Rail. line). *Lat.*, 27° 41′ S. *Long.*, 153° 18′ E. *Min.Ref.* Gold, *see* 4223; Hematite, 4778; Iron Pyrites, 5349, 5350; Ironstone, 5614; Manganese-dioxide, 6456; Mispickel, 6779-6782; Psilomelane, 7096. *See also under* Gov. Ming. Jour. Report No. 108.

Geological Note: The rocks in this locality comprise schists (Permo-Carboniferous), coal measures (Ipswich Formation), basalt overlying the coal measures, and recent river alluvium. The schist contains veins of quartz which are occasionally gold-bearing, and in the coal measures there are seams of workable coal. *See* G.S.Q.P. Nos. 36 and 225.

—— (5 miles S. of). *Min.Ref.* Gold, *see* 4226B; Ironstone, 5614A; Mispickel, 6781A.

Beer and Dawson's Lease, Yorkey's Goldfield. *Min.Ref.* Calamine, *see* 445; Copperas, 2338; Galena, 3078; Gold, 4409; Iron Pyrites, 5452; Tenorite, 7745; Zinc-Blende, 8212.

Beinber Bore. *See under* Artesian Bores. No. 355.

Beirbank Bore. *See under* Artesian Bores. No. 163.

Belfast Group of Copper Mines, S.S.W. of Cloncurry. Includes only the Belfast M.L. (303). *Min.Ref.* Chrysocolla, *see* 1494; Copper Pyrites, 2071; Hematite, 4681; Limonite, 5751; Malachite, 6096; Redruthite, 7211; Tile ore, 2498; Turgite, 7881.

—— Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

Belford Bore. *See under* Artesian Bores. No. 284.

Bell Co., Kennedy South Dist. *See map*, Pl. 14.

—— Bird Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

—— Rock, Brit. New Guinea. *Min.Ref.* Limestone, *see* 700.

Bell-Gay Reef, Cape R. Goldfield. *Min.Ref.* Copper Pyrites, *see* 2236; Galena, 2946; Gold, 4048; Iron Pyrites, 5262.

Bell Town Sub-artesian Bores. *See under* Artesian Bores. No. 84.

Bell's Flat, Florence Cr., Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3176.

—— Lode, Lawn Hills. *Min.Ref.* Galena, *see* 2692.

—— Sel. (615), S. of Mt. Chelona, nr. Mackay. *Min.Ref.* Gold, *see* 4117; Ironstone, 5584.

Bellabad Bore. *See under* Artesian Bores. No. 227.

Bellert's Bore. *See under* Coal Bores. *See also Min.Ref.* No. 1830A.

—— Shaft, N.E. of Torbanlea. *Min.Ref.* Coal, *see* 1830A; Sulphur (native), 7668A.

Bellevue Stn., Mitchell R. *Min.Ref.* Agate, *see* 1374.

Bellkate Bore. *See under* Artesian Bores. No. 306.

Bellridge's Sel. (35), 4 miles S.E. of Copperfield. *Min.Ref.* Limestone, *see* 661.

Belmont, 8 miles E. of Brisbane. *Min.Ref.* Coal, *see* 1760.

—— Sub-artesian Bores. *See under* Artesian Bores. No. 164.

Belmore Co., Maranoa Dist. *See map*, Pl. 12.

—— Cr., Croydon Goldfield. Reefs here include General Gordon, General Grant, Lord Nelson, and May Day. *Min.Ref.* Gold, *see* 3476; Graphite, 4573.

Belyando Co., Kennedy South Dist. *See map*, Pl. 14.

Ben Lomond, Gregory R., S.E. of Bowen. *Min.Ref.* Garnet, *see* 3125; Limestone, 653. Geological Note: Ben Lomond consists of an outlier of sandstone belonging to the "Star Formation" (Permo-Carboniferous) resting on granite and on Devonian slates. *See* G.S.Q. Pub. No. 26 for notes.

—— Silver Mine, Star R. Mineral Field. *Min.Ref.* Cerussite, *see* 1261; Minium, 6606.

—— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 885; Mica, 6557.

Bendena Bore. *See under* Artesian Bores. No. 165.

Bennett's Bore. *See under* Artesian Bores. No. 392.

—— Mine, Reid's Cr. Goldfield. *Min.Ref.* Gold, *see* 3590.

—— Sel. (411), 1 mile N. of Kingston Rail. Stn. (S. Coast line). *Min.Ref.* Gold, *see* 4218.

Bennion's Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3482. *See also under* Gov. Ming. Jour. Reports 67 and 122.

Bentinck Co., Darling Downs Dist. *See map,* Pl. 12.

Bentinck Is., about 28 miles N. of Gulf Coast. *Co.* Wellesby; *Dist.* **Burke.** *See maps,* Pls. 20, 21.

Geological Note: Most of the island is made up of "Desert Sandstone" Formation (Upper Cretaceous), a small portion to the south being a Post Tertiary Formation of shell limestone and calcareous sandstone. *See* G.S.Q. Pub. No. 180 for details.

Bergen Sub-artesian Bore. *See under* Artesian Bores. No. 233.

Bergl Bore. *See under* Artesian Bores. No. 358.

Berkeley (Grist's) Bore. *See under* Artesian Bores. No. 290.

Berrie-Pattison Mine, Paradise Goldfield. *Min.Ref.* Gold, *see* 3608; Iron Pyrites, 5003.

Berserker Ranges, N. of Fitzroy River, nr. Rockhampton. *Min.Ref.* Asbestos, *see* 112.

Geological Note: The rocks comprise quartzite, slates, grits, and sandstones of Gympie Formation (Permo-Carboniferous).

Bertha P.C., Bower-bird Goldfield. *Min.Ref.* Gold, *see* 3458; Ironstone, 5485.

Berwick Bore. *See under* Artesian Bores. No. 161.

Beryl. *Compo.,* Silicate of alumina and glucina. *Colour,* green, bluish, yellowish, &c. Vitreous. $H = 7{\cdot}5$—8. *Sp.gr.* = 2·6—2·7. *Vars.,* Aquamarine, bluish-green; Beryl, pale-green.

Associated Minerals: Amethyst, Cairngorm, Cassiterite (Tin), Diamond, Garnet, Gold, Rock Crystal, Sapphire, Spinel, Topaz, Tourmaline, Zircon, etc., etc., all in alluvial deposits.

Mineral Note: Beryl, and the variety called Aquamarine, occurs in the tin drift of the Herberton and Chillagoe Mineral Fields, notably at Brooklands Station, and is occasionally found in other parts of the State. Some of the stones make very beautiful gems, and are in great demand.

291 Beryl (as large crystals). *Assoc.with* Topaz and Cassiterite. *Loc.* O'Brien's Cr., "Nine-mile," Lancewood Tin Mines, 30 miles S. of Fossilbrook, 45 miles E.byN. of Georgetown. *Co.* Tate; *Dist.* **Cook.** *Ref.* B.D.

292. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Dolcoath Cr., 3 miles E.byS. of Stanthorpe Rail. Stn. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 85 (1898).

293. ——. *Assoc.with* Diamond, yellow, green, blue, and pink Sapphire, Spinel, Zircon, *var.* Hyacinth, Garnet (red), Tourmaline, Topaz, Amethyst, Cairngorm, Rock Crystal, Cassiterite, and traces of Gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot, Sugarloaf, Lode, Arbouin's, Cannon, Kettle Swamp Crs., and Severn R., Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120 (1898), and B.D.

294. ——. *Loc.* Ingola Tunnel, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* **Kennedy North.**

295. —— (white). *Loc.* Yellow Waterholes, Clermont, 229 miles W.byN. of Rockhampton (Clermont-Blair Athol Rail). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* L.B. 3, p. 615 (1895).

296. ——. *Loc.* Gympie Road, Caboolture, 31 miles N. of Brisbane (North Coast line). *Co.* Canning; *Dist.* **Moreton.** *Ref.* G.S.M.

297. ——. Lagoon Cr., Caboolture (*ante*). *Ref.* L.B. 1, p. 270 (1893).

298. ——. *Assoc.with* Topaz and Gold, in alluvial deposits. *Loc.* Bed of Fly River, 304 miles W.byN. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 77, p. 8 (1891).

299. ——. **Aquamarine** (*var.*). *Assoc.with* Topaz and Cassiterite, in alluvial deposits. *Loc.* Lancewood Tin Mines, 10 miles N. of Brooklands Stn., Almaden-Georgetown Road, Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook. *Ref.* B.D.

300. ——. *Loc.* Quartz Hill, on Elizabeth Cr., br. of Einasleigh R., Almaden-Georgetown Rd., 130 miles S.W. of Cairns. *Co.* Tate (*ante*). *Ref.* B.D.

Beryllium (Be). Occurs as a constituent of Beryl. *Atom.Wt.* = 9·1. *Sp.gr.* = 1·64. (Glucinum).

Best Friend Reef, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3682.

Beta Bores. *See under* Artesian Bores. Nos. 157, 334.

Bethania Junction (South Coast Rail. line), 21 miles S.S.E. of Brisbane. *Min. Ref.* Gold, *see* 4216; Iron Pyrites, 5351; Silver, 7510.

Better Luck Mine, Lappa Junction, Chillagoe and Mt. Garnet line. *Min.Ref.* Lead ore, *see* 5724A; Silver, 7462.

—— Reef, Georgetown, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3732.

Betterley Sub-artesian Bore. *See under* Artesian Bores. No. 157.

Bevan Falls, Purari R., Brit. New Guinea. *Min.Ref.* Limestone, *see* 711.

Beverley Tin Mine, Stanthorpe Mineral Field. *Min.Ref.* Cassiterite, *see* 1010.

Bexley Bore. *See under* Artesian Bores. No. 198

Biarra (Par. of), 12 miles N. of Esk. *Min.Ref.* Copper Carbonate, *see* 1953; Copper Pyrites, 2275, 2276; Galena, 3029; Iron Pyrites, 5335; Zinc-Blende, 8175.

Geological Note: The rocks about Biarra are slates, &c., of Gympie Formation (Permo-Carboniferous), disturbed in several places by a basic intrusive rock. Near Esk these rocks are covered by sandstones, etc., belonging to the Walloon Formation (Trias-Jura). *See* G.S.Q. Pub. No. 169 for notes, and 217 (map).

Bibliography of works consulted. *See* References.

Biboohra, 41 miles (by rail) W. of Cairns. *See maps,* Pls. 8, 9, 22. Railway base for Mt. Molloy Copper Mines; Mt. Fraser, Mt. Lewis and Mt. Spurgeon Tin Mines; and the Mt. Carbine Wolfram Mines.

Biddenham Lease Bore. *See under* Artesian Bores. No. 166.

Biddy Walsh Reef, Clermont Goldfield. *Min.Ref.* Dolomite, *see* 2588; Gold, 4165; Iron Pyrites, 5326; Magnesite, 5950; Siderite, 7415.

Big Ben Silver Mine, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2931; Iron Pyrites, 5258.

—— —— Tin Claim, Herberton. *Min.Ref.* Augite, *see* 139; Cassiterite, 1065.

—— Creek Bore. *See under* Artesian Bores. No. 415.

—— Hill, Talgai Goldfield. *Min.Ref.* Gold, *see* 3857-3862; Iron Pyrites, 5123.

—— —— Gully (*ante*). *Min.Ref.* Gold (alluvial), *see* 3253.

—— —— Reef (*ante*). *Min.Ref.* Gold, *see* 3856.

—— Reef, Castleton, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2747; Gold, 3719; Iron Pyrites, 5040.

—— ——, Pentland, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4053.

—— River, 50 miles W. of Townsville. *Min.Ref.* Copper (ores), *see* 2038.

—— Ruby Tin Mine (Block 406), Sugarloaf Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1025.

—— Ti-tree Gully, Clermont Goldfield. *Min.Ref.* Gold, *see* 4162.

Biggenden Gold and Bismuth Mine—

Situation: *See maps,* Pls. 4, 5. 4½ miles W. of Biggenden Rail. Stn. *Co.* Cook; *Dist.* Burnett. *Lat.* 25° 33′. *Long.* 152° 3′.

Min.Ref.: Gold, *see* 3597; Bismuth—(native), 326; (Bismite), 311; **(Bismuthinite)**, 357; (Bismutite), 379; (Eulytite), 2621; Manganese (dioxide), 6399. Cobalt (Erythrine), 2619. Iron—(Hematite), 4696; (Iron Pyrites), 4997; (Lollingite), 5942); (Magnetite), 5976; (Mispickel), 6655. Limestone, 625. Other Minerals—Actinolite, 4855; Aragonite, 86; Calcite, 474, 475; Chalcedony, 1339; Chlorite, 1427; Dolomite, 2585; Epidote, 2592; Felspar, 2627; Hornblende, 4824; Iceland Spar, 581; Kaolin, 5672; Olivine, 6920, 6921; Tourmaline, 7822; Viridite, 7918.

Min. Statistics: *See* Pls. 37, 40, 41, 46-46A.

Geological Note: The country rocks comprise slates, tuffs, limestones, &c., of Gympie Formation (Permo-Carboniferous) and granite. The Mt. Biggenden bismuth deposits are between slate and limestone, near granite, the matrix being generally magnetite.

Geological Publications: Reports—Nos. 60 (1890) and 173 (1902)). *See under* Geo. Sur. Pub. List for titles.

Warden: Stationed at Maryborough. Inspector of Mines: Stationed at Rockhampton.

—— (Hill N.E. of). *Min.Ref.* Azurite, *see* 179; Epidote, 2593; Malachite, 6198; Wollastonite, 8041.

—— (above) (*ante*). *Min.Ref.* Scorodite, *see* 7362.

Biggenden to Degilbo (in belt running S. from). *Min.Ref.* Limestone, *see* 624.

Biggenden Rail. Stn., 46 miles W. from Maryborough, on Gayndah line. Railway base for Biggenden Gold and Bismuth Mines.

Bignall's Sub-Artesian Bore. *See* Artesian Bores. No. 134.

Billy Brown Reef, Croydon Goldfield. *Min.Ref.* Galena, *see* 2710B; Gold, 3529; Iron Pyrites, 4960; Pyromorphite, 7135.

Bimerah Lease Bores. *See under* Artesian Bores and Notes. No. 167. Bands of Coal at 3,700 ft. *Min.Ref.* Coal, *see* 1709c *Note:* The Whitewood (Bimerah No. 2) Bore is the deepest in the State. Depth, 5,045 feet.

Binburie Co. Gregory North Dist. *See map*, Pl. 20.

Bin Bin Range, to the S. of Mt. Shamrock. *Min.Ref.* Gold, *see* 3628; Silver, 7438.

Binda Lease Bore. *See under* Artesian Bores. No. 168.

Bindebango Run Bore. *See under* Artesian Bores. No. 168.

Bingara Run Bores. *See under* Artesian Bores. No. 169.

——, 59 miles W. of Cunnamulla Rail. Stn. (Western line). *Lat.*, 25° 11′ S; *Long.* 144° 39′ E. *Min.Ref.* Selenite, *see* 4648.

Bingera Coal Seams. *See under* Pine Creek.

Bingera, 2 miles S. of Birthamba Rail. Stn., Mt. Perry line. *Lat.* 25° S. *Long.*, 152° 13′ E. *Min.Ref.* Gold, *see* 4385A; Magnetite, 6061.

Binigi Bores. *See under* Artesian Bores. No. 274.

Binjour Plateau Sub-artesian Bores. *See under* Artesian Bores. Nos. 7, 85.

Binnum Bore. *See under* Artesian Bores. No. 324.

Biondella Hill, nr. Gladstone. *Min.Ref.* Psilomelane, *see* 7098.

Biotite, *syn.* Magnesia-Iron Mica, Black Mica. *Compo.*, Silicate of alumina, magnesia, and iron. *Colour*, usually black; in cleavage plates, usually reddish or greenish. *H.* = 2·5—3; *Sp.gr.* = 2·7—3·1. *See notes under* Mica.

301. ——. *Assoc.with* Redruthite, Malachite, Azurite, Ironstone, Ilmenite, Calcite, and Chlorite, in felspar, quartz, granite, and schist. *Loc.* Mavis M.L. (315), Longamundi Group, Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 283, 284 (1908).

302. ——. *Assoc.with* Hornblende and Orthoclase, in granite. *Loc.* Eidsvold Goldfield, 37 miles W.S.W. of Mt. Perry. *Co.* Yarrol; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 43, p. 1 (1887).

303. ——. *Assoc with* Gold, Orthoclase, and Quartz, in pegmatite. *Loc.* Golden Treasure Mine, Tate R., 2 miles W. of Tate Tel. Stn., about 22 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 119, p. 41 (1897).

304. —— in pegmatite. *Loc.* Bakerville Mine, Baker's Camp, 4 miles W. of Watsonville, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

305. ——. *Assoc.with* Wolfram, Monazite, and Topaz, in quartz lode. *Loc.* Fingertown, 9 miles N. of Nymbool, Walsh and Tinaroo Mineral Field (*ante*). *Ref.* B.D.

306. ——. In pegmatite, between Bismarck and Granite Crs., Chillagoe, 139 miles W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

307. ——. *Assoc.with* Cassiterite, Mispickel, Hornblende, Steatite, Chlorite, and Orthoclase, in lode. *Loc.* Gt. Northern Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 3 (1887), P.R.S.Q., vol. 4, p. 66 (1887), and vol. 15, p. 52 (1900).

308. ——. *Assoc.with* Orthoclase and Hornblende, in granite. *Loc.* Norton Goldfield, 32½ miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 21, p. 5 (1885).

309. ——. *Assoc.with* Felspar. *Loc.* Grevillia Cr., 8 miles S.S.W. of Benaraby Rail. Stn. (North Coast line), 22 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*).

309A. Biotite. *Assoc.with* Copper Pyrites, Copper Carbonate, Mispickel, and Ironstone, in quartz lode. *Loc.* Dee R. Copper Mines, above Dundee, 20 miles S.S.W. of Mt. Morgan Rail. Stn., and near rail. line under construction to Dawson R. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 15, p. 8 (1901).

310. ——. In granite. *Loc.* Mt. Bopple, 3 miles S.E. of Netherby, and 3 miles N.E. of Gundiah, and about 35 miles (by rail and road) N.byW. of Gympie, North Coast Rail. *Co.* March; *Dist.* **Wide Bay.** *Ref.* L.C.B.

——. *See also under* Mica.

Birralee. *See maps,* Pls. 14, 15, on Bowen R., S.W. of Bowen. *Min.Ref.* Calcite, *see* 510; Malachite, 6328.

Bird-in-the-Bush Gold Mine, Croydon Goldfield. *Min.Ref.* Coal, *see* 1596.

Birkhead Station Sub-artesian Bore. *See under* Artesian Bores. No. 348.

Birthday Mine, Dry R., Newelton. *Min.Ref.* Stibnite, *see* 7639; Wolfram, 8011.

—— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1066.

Biscuit Cr., Upper Burdekin, 40 miles S.W. of Ingham. *Min.Ref.* Hematite, *see* 4744.

Bishop's Cr., Cloncurry. *See maps,* Pls. 21, 23. *Min.Ref.* Gold, *see* 3452, 3453; Hematite, 4669; Iron Pyrites, 4918; Ironstone, 5482A; Limonite, 5747; Silver, 7424A.

—— Seam, Donnybrook Colliery, North Ipswich Coal Area. *Min.Ref.* Coal, *see* 1737. *See also* Q.G.M.J. Report, No. 112.

Bismarck Cr., Chillagoe. *Min.Ref.* Biotite, *see* 306.

—— Mine, Coolgarra. *Min.Ref.* Malachite, *see* 6276; Wolfram, 8007.

—— Reef, Copperfield. *Min.Ref.* Gold, *see* 4157.

—— Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 886.

Bismite. *Syn.,* Bismuth Ochre. *Compo.,* Oxide of bismuth. *Colour,* yellowish white. *Sp.gr.* = 4·3. Earthy, dull. *Contents* (*max.*), Bismuth 89 per cent.

311. ——. *Assoc.with* Gold, Bismuth (native), Bismuthinite, Bismutite, Iron Pyrites, Hematite, Magnetite, Mispickel, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, Chalcedony, and Epidote. *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden, 58 miles (by rail and road) W. of Maryborough, Gayndah Br. Rail. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 60, p. 2 (1890), and p. 173 (1902), and 194 (1904).

312. ——. *Assoc.with* Gold and Hematite. *Loc.* Mt. Shamrock Mine, Mt. Shamrock, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Assay:* Metallic Bismuth = 62 per cent.; Gold = 252 oz. per ton. *Ref.* G.S.Q. Pub. 25 (1886), and Q.G.M. Journal, vol. 12, pp. 169-173 (1911).

313. ——. *Assoc.with* Gold and Copper Carbonate, in quartz. *Loc.* Maid of Erin Mine, Tunnel Reef, Eidsvold Goldfield, 35 miles N.W. of Gayndah, 35 miles W.S.W. of Mt. Perry. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 125, p. 37 (1897).

314. ——. *Assoc.with* Gold, Galena, Copper Pyrites, Cuprite, Malachite, Azurite, Native Bismuth, Bismuthinite, Bismutite, Manganese-dioxide, Hematite, and Ironstone. *Loc.* Daisy Bismuth Mine, 3 miles E. of Eukalunda, Sellheim Mineral Field, 95 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 57, p. 7 (1889), and G.S.M.

315. ——. *Assoc.with* Copper Pyrites, Hematite, and other Bismuth ores, and Manganese-dioxide, in lode. *Loc.* Eukalunda Bismuth Mine, 3 miles E. of Eukalunda (*ante*). *Ref.* G.S.Q. Pub. 57, p. 8 (1889).

316. ——. *Assoc.with* Iron Pyrites, Galena, Massicot, Mispickel, and Chlorite. *Loc.* Blacbkutt, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* O.R.

Bismuth (Bi). *Atom.Wt.* = 208·0. *Sp.gr.* = 9·78-9·82. *Colour,* pinkish-white metallic. Somewhat brittle.

USES: Principally alloyed with lead and tin to make easily fusible compounds, such as solders, and fusible plugs for boilers. Also used in stereotype castings, medicine, cosmetics, etc.

MINERALS: *See* Bismuth (native), Bismite, Bismutite, Bismuthinite, Eulytite, Joseite, Tetradymite.

MINERAL NOTE: Associated metallic minerals include Gold, Silver, Wolfram, Molybdenite, Cassiterite (tin), Manganese, Copper ores, Zinc ores, Iron ores, Lead ores, Tetradymite, Joseite, &c., &c. Common gangues include "Ironstone" Magnetite, Calcite, Quartz, Epidote, Chlorite, Mica, Topaz, Fluorspar, Felspar, Hornblende rock, Slate, Sandstone, Limestone, Greisen. Alluvial deposits of Native Bismuth and Bismutite occur in association with Gold, Garnet, Tin, &c.

GEOGRAPHICAL NOTE: The principal occurrence of bismuth is at Mt. Biggenden, in the Burnett district, but it is also found on the Sellheim and Star River Mineral Fields, and on the Herberton and Chillagoe Mineral Fields (Walsh and Tinaroo). Other localities in which it is found include Cloncurry, Etheridge, Mt. Shamrock, Eukalunda, Kilkivan, Stanthorpe, Rosedale, and Kangaroo Hills. *See under* names of fields for details.

STATISTICAL NOTE: The Biggenden Gold and Bismuth Mine to the end of 1912 has produced more than half the total bismuth output of the State, the quantity being 411·80 tons. The Bismuth Mines near Ukalunda, Sellheim Mineral Field, have produced 202 tons, but at the present time are not being worked. Hodgkinson and Herberton have an output of bismuth amounting to 47 and 29·05 tons respectively. The percentages of the above yields to the estimated total production of bismuth in Queensland to the end of 1910 is as follows—viz., **Biggenden,** 59·13 per cent.; Sellheim, 29 per cent.; Hodgkinson, 6·75 per cent.; Herberton, 4·17 per cent. Bismuth also occurs in the Etheridge and Bowen Districts. The year 1892 was the most productive in the history of the State, having yielded 130 tons of bismuth, valued at £16,000, this being equal to 18·64 per cent. of the State's total production, and 14·40 per cent. of the total value of bismuth produced to the end of the year 1910. The total yield of bismuth from 1889 (the first record) to the end of 1912 is estimated at 696·45 tons, valued approximately at £111,089, equal to 0·10 per cent. of the total mineral production of the State. *See tables*, Pls. 40, 45, 46, 46A; *also diagram*, Pls. 52, 57, for details.

BIBLIOGRAPHY: (*Principal References*) Ball (L. C.), G.S.Q. Pubs., Nos. 173 (1902), 185 (1903); Cameron (W. E.), G.S.Q. Pub., No. 188 (1903); Jack (Dr. R. L.), G.S.Q. Pub., No. 57 (1889). *See under* Geol. Surv. Pub. List for titles.

317. Bismuth. *Assoc.with* Gold, in quartz leader. *Loc.* Two-mile Cr. Diggings, Cloncurry, 480 miles (by rail) W.byS. of Townsville (Gt. Northern line). *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 104, p. 5, (1895).

318. ——. *Assoc.with* Gold. *Loc.* Don Jon Mine, nr. Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* **Burnett.** *Assay:* Gold = 12 dwt. 19 grs. per ton; Bismuth = 12·4 per cent. *Ref.* A.R., p. 62 (1906).

319. ——. *Assoc.with* Gold. *Loc.* Mt. Havilah Mine, Mt. Havilah (*ante*). *Assay:* Bismuth = 12·3 per cent.; Gold = 8 dwt. 9 gr. per ton. *Ref.* A.R., p. 60 (1906).

320. ——. *Assoc.with* Wolfram, in gneiss and mica schist. *Loc.* nr. Brookland Stn., Junction Cr., Einasleigh River, 45 miles E.byN. of Georgetown. *Co.* Tate; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 134, p. 19 (1898).

321. ——. *Assoc.with* Gold, Iron Pyrites, Massicot, Cerussite, Cassiterite, and Calcite, in kaolinised greisen. *Loc.* Snowdrop P.A., Mt. Langan, nr. Blackbutt, Emu Cr., 14½ miles W.N.W. of Kannungar (Brisbane-Valley Rail. Line). *Co.* Cavendish. *Dist.* **Moreton.** *Ref.* O.R.

322. ——. *Assoc.with* Gold, Silver, and Lead, in clay. *Loc.* Mt. Langan, Emu Cr., nr. Blackbutt (*ante*). *Assay:* *See* No. 7507. *Ref.* A.R., p. 69 (1906).

Bismuth (native). *Compo.*, Pure bismuth. *Colour*, Metallic-white, with pink hue. *H.* = 2-2·5. *Sp.gr.* = 9·7. Sectile, brittle. NOTE: Probably the Native Bismuth of Mt. Shamrock is a bismuth-gold alloy, as the mineral sometimes contains gold not recognizable in a free state and assaying between 300 and 400 oz. of gold to the ton.

323. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

324. ——. *Assoc.with* Gold and Bismutite, in quartz reef. *Loc.* Mary Douglas Hill, Top Camp Diggings, 24 miles S.byW. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10 (1885), and 104 (1895).

325. ——. *Assoc.with* Gold, in steatite. *Loc.* Nanango Goldfield, 96 miles (by rail) S.S.W. of Theebine Rail. Stn., and 135 miles (by rail) S.S.W. of Maryborough. *Co.* Fitzroy; *Dist.* **Burnett.** *Ref.* P.R.S.Q., vol. 4, p. 44 (1887).

326. Bismuth. *Assoc.with* Gold, Bismite, Bismutite, Bismuthinite, Iron Pyrites, Hematite, Magnetite, Mispickel, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, Chalcedony, Epidote, in slate and hornblende rock. *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn., 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Analysis:* Bismuth = 44·45 per cent.; Cobalt = 4·75; Nickel = 0·68; Iron = 13·55; Manganese = 9·75; Lime and Magnesia = 19·92; Silica = 6·90. *Ref.* G.S.Q. Pubs. 60, p. 2 (1890), and 173, p. 2 (1902).

326A ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Bismuthinite, Copper Pyrites, Magnetite, and Ironstone, in lode. *Loc.* Don Jon Bismuth Mine, ¼ mile S. of Mt. Havilah, 2¼ miles S.S.W. of Degilbo. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 173, p. 4 (1902), and 207, pp. 13, 14 (1907).

327. ——. *Assoc.with* Bismuthinite, in quartz. *Loc.* Mt. Steadman, nr. Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn., 58 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* B.D.

328. ——. *Assoc.with* Gold, Telluride of Gold, Copper Pyrites, Malachite, Bismuthinite, Joseite, Zinc-Blende, Mispickel, and Calcite. Note: Sample contained 443·6 oz. of gold per ton. *Loc.* Mt. Shamrock Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah br. line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 60, p. 6 (1890), 125 (1897), 168 (1901), and B.D.

329. ——. *Assoc.with* Wolfram, Cassiterite, Molybdenite, Scheelite, and Bismutite, with traces of Copper Pyrites, in quartz, chlorite, and muscovite. *Loc.* Pinnacle Cr., br. of Lynd R., 16 miles W. of Fossilbrook, 50 miles S.W. of Almaden, Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* B.D.

330. ——. *Loc.* Home Rule Mine, Hodgkinson Goldfield, 19 miles (by coach) from Dimbulah Rail. Stn. (Cairns line), 92 miles (by rail and road) W. of Cairns. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M.

331. ——. *Assoc.with* Cassiterite, Wolfram, Molybdenite, Bismutite, Mispickel, and Scorodite, with traces of Copper Pyrites, Cuprite, Tenorite, Malachite, Azurite, Iron Pyrites, Hematite, &c., in irregular masses of quartz and greisen in granite. *Loc.* Boonmoo, 81 miles (by rail) S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson (*ante*). *Ref.* B.D.

332. ——. *Loc.* Gt. Southern Tin Mine, Irvinebank, 10 miles S.W. of Stannary Hills, 12 miles W.S.W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

333. ——. *Assoc.with* Cassiterite. Vulcan Tin Mine, Irvinebank (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 54 (1900).

333A.——. *Assoc.with* Wolfram, Molybdenite, and Bismutite, with traces of Hematite, Limonite, Mispickel, and Scorodite, in irregular masses of quartz and greisen in granite. *Loc.* Stannary Hills, 93 miles (by rail) S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

334. ——. *Assoc.with* Cassiterite, in chlorite. *Loc.* Herbertina Tin Mine, Watsonville, 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe line), 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

335. ——. *Assoc.with* Wolfram, Molybdenite, Bismutite, Bismuthinite, Mispickel, Scorodite, Scheelite, Cassiterite, Manganese-dioxide, with traces of Iron Pyrites, Hematite, Limonite, and Magnetite, &c., in irregular masses of quartz in greisen belt. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbulah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

336. ——. *Assoc.with* Wolfram, Molybdenite, and Bismutite, in quartz and fluorspar. *Loc.* Schardon's Mine, 4 miles N. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

336A.——. *Assoc.with* Native Bismuth. *Loc.* Rose of Denmark Mine, Bamford, 3 miles N.N.W. of of Petford (Chillagoe Rail line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* O.R.

337. ——. *Assoc.with* Wolfram, Molybdenite, Bismutite, Scheelite, Molybdite, Mispickel, and Scorodite, with traces of Copper Pyrites, Tenorite, Chrysocolla, Iron Pyrites, &c., in irregular masses of quartz, in greisen. *Loc.* Bamford Wolfram Mines, Bamford (*ante*). *Ref.* B.D.

338. ——. *Assoc.with* Wolfram, Molybdenite, Tungstite, Bismutite, with traces of Cuprite, Malachite, Iron Pyrites, Hematite, and Limonite, in quartz. *Loc.* Eight-mile Mountain, 8 miles N.N.W. of Fossilbrook, 28 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

339. ——. *Assoc.with* Wolfram, Cassiterite, Bismuthinite, and Bismutite, in quartz, muscovite, fluorspar, &c. *Loc.* Emuford, Emu Cr., br. of Walsh R., 11 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

340. ——. Claim, 1½ mile N.W. of Koorboora Rail. Stn. (Chillagoe line), 108 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*).

341. ——. *Assoc.with* Wolfram. *Loc.* Lappa Lappa Wolfram Mine, 2½ miles S.S.W. of Lappa Rail. Stn. (Chillagoe line), 102 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 50 (1900).

342. ——. *Assoc.with* Bismuthinite and Bismutite, in quartz blow, in granite. *Loc.* Mt. Marlay, 2½ miles E. of Stanthorpe, 209½ miles (by rail and road) S.W. of Brisbane. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* B.D.

343. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Stanthorpe, 207 miles S.W. of Brisbane (Main Rail. line). *Co.* Bentinck (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 44 (1887).

344. ——. *Assoc.with* Cassiterite, in quartz reef. *Loc.* Home Rule Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 8 (1883).

345. ——. *Assoc.with* Cassiterite, Copper, and Ironstone, in lode. *Loc.* Lancelot Tin Mines, Newelton, Silver Valley, 10 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills, Chillagoe Br. Rail., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q.P. 119, p. 27 (1897).

347. ——. Return Cr., br. of Herbert R., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.M.

348. ——. *Loc.* Star R. (Argentine) Silver Field, 50 miles (by coach) N.W. of Ravenswood Junction (Gt. Northern Rail. line). *Cos.* Elphinstone and Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.M.

349. ——. *Loc.* Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* B.D.

350. ——. *Assoc.with* Gold, Galena, Copper Pyrites, Cuprite, Malachite, Azurite, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Hematite, and Ironstone. *Loc.* Daisy Bismuth Mine, Ukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* **Kennedy South.** *Assay:* Bismuth = 33·76 per cent. *Ref.* G.S.Q. Pub. 57, pp. 7 and 8 (1889), and G.S.M.

350A. ——. *Assoc.with* Molybdenite and Wolfram. *Loc.* Wandoo and Bolingbroke Stations, about 25 miles E.N.E. of Nebo, and about 40 miles S.W.byS. of Mackay. *Co.* Wodehouse; *Dist.* **Leichhardt.**

351. ——. *Assoc.with* Gold and Silver Ores. *Loc.* Emu Creek, about 10 miles N.W. of Cressbrook. *Co.* Cavendish; *Dist.* **Moreton.**

352. ——. *Assoc.with* Wolfram, Molybdenite, Tungstite, Bismutite, and Wad, with traces of Copper Pyrites, Tenorite, Iron Pyrites, Hematite, &c., in defined quartz lodes in greisen and sandstone. *Loc.* Rosedale Mineral Field, 34 miles N.W. of Bundaberg (North Coast line). *Co.* Flinders; *Dist.* **Port Curtis.** *Ref.* B.D.

353. Bismuth (ore). *Assoc.with* Magnetite and Garnet. *Loc.* Mt. Hastings Mine, 2 miles S.E. of Biggenden Rail. Stn. (Gayndah Br. line). *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 173, p. 4 (1902), and G.S.M.

354. ——. *Assoc.with* Cassiterite, Copper Carbonate, and Ironstone. *Loc.* Achilles Lease (252), Mt. Brown, 40 miles S.W.byS. of Ingham, Kangaroo Hills Mineral Fields. *Co.* Wairuna; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 82, p. 9 (1892), and G.S.M.

355. ——. *Loc.* In Creek, Halifax Bay, 36 miles N.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 10 (1891).

356. ——. *Assoc.with* Copper Pyrites, Hematite, and Manganese-dioxide, in lode. *Loc.* Eukalunda Bismuth Mine, 3 miles E. of Eukalunda, 92 miles S.W.byS. of Ingham, Sellheim Mineral Field. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 57, p. 8 (1889).

Bismuth carbonate. *See* Bismutite.

Bismuth Clance. *See* Bismuthinite.

Bismuth Ochre. *See* Bismite.

—— oxide. *See* Bismite.

—— silicate. *See* Eulytite.

—— sulphide. *See* Bismuthinite.

—— telluride. *See* Joseïte, Tetradymite.

Bismuthine. *Syn.* Bismuthinite, *which see.*

Bismuthinite. *Syn.*, Bismuth Glance, Bismuthine. *Compo.*, Sulphide of Bismuth. *Colour and streak*, lead-grey. *H* = 2. *Sp.gr.* = 6·4. *Contents (max.)*, Bismuth 81 per cent.

357. ——. *Assoc.with* Gold, Native Bismuth, Bismutite, Bismite, Iron Pyrites, Hematite, Magnetite, Actinolite, Mispickel, Manganese-dioxide, Erythrine, Viridite, Calcite, Chalcedony, and Epidote, in slate and hornblende rock. *Analysis:* Bismuth, 80 per cent.; sulphur, 18 per cent.; insolubles, lime, and iron, 2 per cent. (crystallised specimen). *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Marybrough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 60, p. 2 (1890), 173, pp. 1-5 (1902), and G.S.M.

358. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Cuprite, Tenorite, Malachite, Iron Pyrites, Mispickel, Hematite, Zinc-Blende, Pyrrhotite, and Calcite. *Loc.* Commonwealth Mine, Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Assay:* Gold = 16 gr. per ton; Silver = 6 oz. 13 dwt. 8 gr. per ton; Bismuth = 1·1 per cent.; Zinc = 0·3 per cent.; Copper = 3·5 per cent. *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), and 207, pp. 14-19 (1907).

359. ——. *Assoc.with* Gold, Silver, Native Bismuth, Copper Pyrites, Iron Pyrites, Mispickel, Magnetite, and Ironstone, in lode of calcite in slate. *Loc.* Don Jon Bismuth Mine, ¼ mile S. of Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Assay:* Gold, 2 dwt.; Silver, 2 oz. per ton; Copper 2½, and Bismuth 4½ per cent. *Ref.* G.S.Q. Pubs. 173, p. 4 (1902), and 207, pp. 13, 14 (1907).

360. ——. *Assoc.with* Tetradymite and Magnetite. *Loc.* Don Jon Mine, nr. Mt. Havilah (*ante*). *Assay: See* Tetradymite. *Ref.* A.R., p. 44 (1906).

361. —— *Assoc.with* Native Bismuth, Hematite, Calcite, and Limestone. *Loc.* Don Jon Mine, nr. Mt. Havilah (*ante*). *Ref.* B.D.

362. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Bismutite, in quartz. *Loc.* Kent's Knob Mine, ¼ mile N.W. of Mt. Shamrock, 5½ miles N.W. of Degilbo, Gayndah Br. Rail. *Co.* Cook; *Dist.* Burnett. *Ref.* B.D.

363. ——. *Assoc.with* Gold (native), Gold telluride, Copper Pyrites, Malachite, Native Bismuth, Joseïte, Molybdenite, Mispickel, Zinc-Blende, and Calcite. *Loc.* Mt. Shamrock Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah Br. line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 60, p. 6 (1890), and 125 (1897), and 168 (1901), and B.D.

364. ——. *Assoc.with* Native Bismuth, in quartz. *Loc.* Mt. Steadman, 4½ miles W. of Biggenden Rail. Stn. (Gayndah Br. line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* B.D.

365. ——. *Assoc.with* Cassiterite, in chlorite. *Loc.* Gt. Southern Mine, Irvinebank, 12 mlies W.S.W. of Herberton, 10 miles S.W. of Stannary Hills, Chillagoe Br. Rail., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 125, page 47 (1897).

366. ——. *Assoc.with* Cassiterite. North Britain Mine, Irvinebank (*ante*). *Ref.* G.S.M.

366A. ——. *Assoc.with* Cassiterite. *Loc.* Southern Tin Mine, Irvinebank (*ante*). *Ref.* G.S.M.

367. *Assoc.with* Wolfram, Molybdenite, Native Bismuth, Bismutite, Mispickel, Scorodite, Scheelite, Cassiterite, and Manganese-dioxide, with traces of Iron Pyrites, Hematite, Limonite, Magnetite, etc., in irregular masses of quartz in greisen belt. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbulah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

368. ——. *Assoc.with* Native Bismuth. *Loc.* Rose of Denmark Mine, Bamford, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* O.R.

369. ——. *Assoc.with* Wolfram, Cassiterite, Native Bismuth, and Bismutite, in quartz, muscovite, fluorspar, &c. *Loc.* Emuford, 11 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

370. —— in quartz. *Loc.* Gilbert River, about 50 miles S.E. of Charleston, Etheridge Gold Field. *Co.* Victor; *Dist.* Cook. *Ref.* G.S.M.

371. ——. *Assoc.with* Native Bismuth and Bismutite, in large quartz blow in granite. *Loc.* Mt. Marlay, 2½ miles E. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.**

372. ——. *Assoc.with* Galena and Zinc-Blende. *Loc.* Gt. Britain Mine, Coolgarra, 9 miles N.N.E. of Mt. Garnet Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.M.

373. ——. *Assoc.with* Gold and Bismutite. *Loc.* Carrington Bismuth Mine, Sellheim R., Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* G.S.M.

374. ——. *Assoc.with* Gold, Galena, Copper Pyrites, Cuprite, Malachite, Azurite, Native Bismuth, Bismutite, Bismite, Manganese-dioxide, and Hematite. *Loc.* Daisy Bismuth Mine, Ukalunda, Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 57, pp. 7 and 8 (1889), and G.S.M.

374A. ——. *Assoc.with* Gold, in granite. *Loc.* Dattu Dattu Mine, about 25 miles N.N.E. of Crow's Nest Rail. Stn. *Co.* Cavendish; *Dist.* **Moreton.** *Assay, and Ref.* Q.G.M.J., vol. 4, p. 188 (1903).

375. ——. *Assoc.with* Bismutite, Minium, and Malachite, with traces of Gold, in ferruginous quartz. *Loc.* Mt. Samford, Enoggera Ranges, 6½ miles W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 159, p. 18 (1901).

376. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Cuprite, Redruthite, Malachite, Magnetite, and Limonite, in quartz. *Loc.* Kabonga Mine, Kilkivan Goldfield, 48 miles W. of Gympie and 65 miles S.W.byS. of Maryborough, Kilkivan Br. Rail. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 125, p. 36 (1897).

Bismuthite. *Syn.* Bismutite, *which see.*

Bismutite. *Syn.* Bismuthite. *Compo.*, Carbonate of bismuth. *Colour*, whitish, greenish. $H = 4$—4·5. *Sp.gr.* = 6·8—6·9. Earthy. Brittle. *Contents* (*max.*), Bismuth 80 per cent.

377. ——. *Assoc.with* Bismuth (native) and Gold, in alluvial deposits. *Loc.* Mary Douglas Hill, and in the flats at Top Camp Diggings, 24 miles S.byW. of Cloncurry Rail. Stn. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pubs. 10, p. 6 (1885) and 104, p. 5 (1895).

378. ——. *Loc.* Woolgar Goldfield, 97 miles N. of Richmond Rail. Stn., 404 miles (by rail and road) W.byS. of Townsville. *Co.* Woolgar; *Dist.* Burke. *Ref.* G.S.M.

379. ——. *Assoc.with* Gold, Native Bismuth, Bismuthinite, Bismite, Iron Pyrites, Hematite, Magnetite, Mispickel, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, Chalcedony, and Epidote. *Loc.* Biggenden Mine, Mt. Biggenden, 4 miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pubs. 60 (1890), 173 (1902), and 194 (1904), and G.S.M.

380. ——. *Assoc.with* Copper Pyrites, Mispickel, and Calcite, in lode. *Loc.* In shaft 1 mile N.N.E. of Biggenden Mine, Mt. Biggenden, 5 miles W. of Biggenden Rail. Stn. (*ante*). *Ref.* G.S.Q.P. 60, p. 3 (1890).

381. ——. *Assoc.with* Gold, Iron Pyrites, Bismuthinite, and Mispickel, in quartz. *Loc.* Kent's Knob Mine, ¼ mile N.W. of Mt. Shamrock, 5½ miles W.N.W. of Degilbo, Gayndah Br. Rail. *Co.* Cook (*ante*). *Ref.* B.D.

382. ——. *Assoc.with* Wolfram and Molybdenite, with traces of Hematite, Limonite, Mispickel, and Scorodite, in quartz, chlorite, muscovite, and felspar. *Loc.* Blackfellow's Cr., br. of Lynd R., 10 miles W. of Fossilbrook, 40 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* B.D.

383. ——. *Assoc.with* Wolfram, Cassiterite, Molybdenite, Scheelite, and Native Bismuth, with traces of Copper Pyrites, in quartz, chlorite, and muscovite. *Loc.* Pinnacle Cr., br. of Lynd R., 16 miles W. of Fossilbrook, 50 miles S.W. of Almaden, Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

384. ——. *Assoc.with* Wolfram and Molybdenite, in quartz, fluorspar, &c. *Loc.* Rose's Cr., br. of Lynd R., 6 miles S.W. of Fisherton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

385. Bismutite. *Assoc.with* Wolfram, Molybdenite, Cassiterite, Native Bismuth, Mispickel, and Scorodite, with traces of Copper Pyrites, Cuprite, Tenorite, Malachite, Azurite, Iron Pyrites, Hematite, &c., in irregular masses of quartz and greisen in granite. *Loc.* Boonmoo, 81 miles (by rail) S.W.byW. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

386. ——. *Assoc.with* Wolfram, Molybdenite, and Native Bismuth, with traces of Hematite, Limonite, Mispickel, and Scorodite, in irregular masses of quartz and greisen in granite. *Loc.* Stannary Hills, 93 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

387. ——. Mahoney's Claim, Wolfram Camp, 12 miles W.N.W. of Dimbulah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* A.R., p. 151 (1908).

388. ——. *Assoc.with* Wolfram, Molybdenite, Native Bismuth, Mispickel, Scorodite, Scheelite, Cassiterite, Bismuthinite, Manganese-dioxide, with traces of Iron Pyrites, Hematite, Limonite, Magnetite, etc., in irregular masses of quartz in greisen belt. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbulah Rail. Stn. (Chillagoe line) (*ante*). *Ref.* B.D.

389. ——. *Assoc.with* Wolfram, Molybdenite, and Native Bismuth, in quartz and fluorspar. *Loc.* Schardon's Claim, Almaden, 121 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

390. ——. *Assoc.with* Wolfram, Molybdenite, Bismuth (native), Scheelite, Molybdite, Mispickel, and Scorodite, with traces of Copper Pyrites, Tenorite, Chrysocolla, Iron Pyrites, &c., in irregular masses of quartz and greisen. *Loc.* Bamford Wolfram Mines, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

391. ——. *Assoc.with* Wolfram, Molybdenite, Scheelite, Tungstite, and Bismuth (native), with traces of Cuprite, Malachite, Iron Pyrites, Hematite, and Limonite, in quartz. *Loc.* Eight-mile Mountain, 8 miles N.N.W. of Fossilbrook, 28 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

392. ——. *Assoc.with* Wolfram, Cassiterite, Native Bismuth, and Bismuthinite, in quartz, muscovite, and fluorspar. *Loc.* Emuford, 11 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

393. ——. *Assoc.with* Wolfram, in quartz. *Loc.* Fisherton, Tate River, 24 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

394. ——. *Assoc.with* Wolfram, Cassiterite, Molybdenite, Uran-Mica, and Topaz, with traces of Hematite and Limonite, in small veins in large topaz lode in granite. *Loc.* Lappa Wolfram Lode, 2½ miles S.S.W. of Lappa Junction (Chillagoe line), 104 miles (by rail and road) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

395. ——. *Assoc.with* Wolfram and Cassiterite, with traces of Cuprite, Malachite, and Azurite, in quartz, fluorspar, &c. *Loc.* McCord's Cr., Tate R., 5 miles N.N.W. of Fisherton, 20 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

396. ——. *Assoc.with* Wolfram. *Loc.* Dead Finish Claim, Barron R., 5 miles from Tolga Rail. Stn. (Cairns line), 69 miles (by rail and road) S. of Cairns. *Co.* Nares; *Dist.* Cook.

397. —— in alluvial deposits. *Loc.* at the head of the Gilbert River, nr. Mt. Hogan, Etheridge Goldfield. *Co.* Percy; *Dist.* Cook. *Ref.* G.S.M.

398. ——. *Assoc.with* Cassiterite, Wolfram, and Molybdenite, with traces of Copper Pyrites, Copper Carbonate, Hematite, Limonite, and Mispickel, in quartz, chlorite, and muscovite. *Loc.* Four-mile Mountain, 4 miles N.W. of Fossilbrook, Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook. *Ref.* B.D.

399. ——. *Assoc.with* Gold, Magnetite, Limonite, Manganese-dioxide, Ruby, and Garnet, in alluvial deposits. *Loc.* Agate Cr., br. of Robertson R., 38 miles S. of Georgetown, 21 miles S.S.W. of Charleston, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* L.B. 1, p. 940 (1887).

400. ——. *Loc.* Percy R., br. of Gilbert R., near Gilberton, 60 miles S. of Georgetown, Etheridge Goldfield (*ante*). *Assay:* Metallic Bismuth = 72 per cent. *Ref.* A.R., D.M. 1881, p. 25.

401. ——in alluvial deposits. *Loc.* Percy R., br. of Gilbert R. (*ante*). *Ref.* G.S.M.

402. ——. *Assoc.with* Bismuthinite and Native Bismuth, in quartz blow in granite. *Loc.* Mt. Marlay, 2½ miles E. of Stanthorpe, 38 miles (by rail and road) S. of Warwick. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* B.D.

402A.——. *Assoc.with* Cassiterite and Wolfram. *Loc.* Burnt Hut, 6 miles W.byS. of Ballandean Rail. Stn., about 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay and Ref.* A.R., p. 173 (1909).

403. —— at head of Severn River, Stanthorpe. *Co.* Bentinck (*ante*).

404. —— in alluvial deposits. *Loc.* Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuma; *Dist.* **Kennedy North.** *Ref.* G.S.Q.P. 71, p. 10 (1891).

405. ——. Halifax Bay, 36 miles N.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* B.D.

406. ——. *Assoc.with* Gold and Bismuthinite. *Loc.* Carrington Bismuth Mine, Sellheim R., Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* G.S.M.

407. ——. *Assoc.with* Gold, Galena, Copper Pyrites, Cuprite, Malachite, Azurite, Native Bismuth, Bismuthinite, Bismite, Manganese-dioxide, Hematite, and Ironstone. *Loc.* Daisy Bismuth Mine, on Mt. Wyatt and Bowen Roads, 3 miles S. of Eukalunda, Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 57, p. 7 (1889), and G.S.M.

408. ——. Tarrant and Flatau's Bismuth Mine, Sellheim Mineral Field (*ante*). *Ref.* G.S.M.

409. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Mispickel, and Hematite, in quartz veins. *Loc.* Gold Workings, Mine Cr., nr. Black Waterhole Cr., 2 miles N.byE. of Hazledean, 37 miles (by rail and road) S.W. of Mackay, Mt. Spencer Goldfield. *Co.* Wodehouse; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 164, pp. 10-12 (1901).

410. ——. *Assoc.with* Bismuthinite, Minium, and Malachite, with traces of Gold, in ferruginous quartz. *Loc.* Mt. Samford, Enoggera Ranges, 6½ miles W. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 159, p. 18 (1901).

411. ——. *Assoc.with* Wolfram, Molybdenite, Tungstite, Wad, Native Bismuth, with traces of Copper Pyrites, Tenorite, Iron Pyrites, Hematite, &c., in defined quartz lodes in greisen and mudstone. *Loc.* Rosedale Mineral Field, 34 miles (by rail) N.W. of Bundaberg, North Coast line. *Co.* Flinders; *Dist.* Port Curtis. *Ref.* B.D.

Bitter Spar. *Syn.* Dolomite, *which see.*

Bituminous Coal. *See* Coal.

B.K. Cattle Station, 12 miles N.W.byN. of Ipswich. *Min.Ref.* Chromite, *see* 1478.

Black Ball Reef, Hodgkinson Goldfield. *Min.Ref.* Calcite, *see* 483; Copper Carbonate, 1888; Galena, 2763; Gold, 3746.

—— Chief Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1067.

—— Cr., br. of Police Cr., S.byE. of Mt. Wyatt Goldfield. *Min.Ref.* Anglesite, *see* 60A; Cerussite, 1287A; Galena, 3022B; Silver, 7500B.

Black Copper. *Syn.* Tenorite, *which see.*

Black Diamond Mine, Taromeo. *Min.Ref.* Copper Oxide, *see* 2051; Gold, 4203; Ironstone, 5608; Malachite, 6346. *See also* under Gov. Ming. Jour. Report No. 1.

—— —— Reef, Table Top, Croydon Goldfield. *Min.Ref.* Gold, *see* 3547.

—— Fort Mt., nr. Top Camp, Cloncurry. *Min.Ref.* Gold, *see* 3473A; Ironstone, 5491A.

—— Gin Cr., Upper Burdekin. *Min.Ref.* Cassiterite, *see* 1167.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 324.

—— Gully, The Springs, N.N.W. of Clermont. *Min.Ref.* Gold (alluvial) *see* 3337.

Black Jack. *Syn.* Zinc Blende, *which see.*

Black Jack Mine, Cawarral Goldfield. *Min.Ref.* Gold, *see* 4320.

—— —— Mine, Ravenswood Goldfield. *Min.Ref.* Calcite, *see* 503; Chalcanthite, 1332; Copper Pyrites, 2228; Gold, 4018; Iron Pyrites, 5239; Zinc-Blende, 8138.

—— —— Reef, Goldsmith Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3738.

Black Jasper. *Syn.* Touchstone, *var.* of Jasper, *which see.*

Black Johnson's, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3288.

—— King Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1068.

Black Mica. *Syn.* Biotite, *which see.*

Black Mountain (Mt. Leviathan), Cloncurry. *Min.Ref.* Hematite, *see* 4671; Magnetite, 5966.

Black Opal. A variety of precious opal giving alternating bluish, blackish, and bright-coloured reflections. It is only now found at Hungerford ("Lightning Ridge") on the southern border of Queensland. Common Matrix Opal, a dark-brownish ironstone with veinlets of precious opal, is often improperly called black opal. *See under* Opal.

Black Opal Mine Workings, Jundah Opal Field, 130 miles S.W. of Longreach Rail. Stn. (Central line). *Co.* Warbreccan; *Dist.* **Mitchell.** *Min.Ref.* Opal (precious), *see* 6953.

Black Prince Lode, Mt. Hartley, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 801; Felspar, 2629; Mispickel, 6669; Tourmaline, 7838; Wolfram, 7930.

—— —— Mine, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Black Ridge, *see maps,* Pls. 10, 11; 12¾ miles N.N.W. of Clermont.

Discovery: Gold discovered on Gowrie Cr. in 1892; and on the northern extremity of Black Ridge by Messrs. Fox and Aplin in March, 1895.

Mineral Statistics: *Included in* Clermont returns.

Min.Ref.: Coal Bands, *see* 1660-1664; Epsomite, 2616; Gold, 3297-3318; Halloysite, 4661; Hematite, 4765; Iron Pyrites, 5321; Marcasite, 6511, 6512.

Geological Note: The country rocks at this locality, and at The Springs, McMaster's, and Miclere, are schists and slates of indefinite age, coal measures (Permo-Carboniferous), and basalt. Extensive gold-bearing leads (Permo-Carboniferous) rest on the schists and slates, and are covered in places by basalt flows and by a surface-formed quartzite called "billy." *See* G.S.Q.P. No. 201 for details and map.

Black Ridge Bore. *See under* Artesian Bores. No. 432.

—— Rock Cr., flows into Port Newry, 35 miles N.W. of Mackay. *Min.Ref.* Coal, *see* 1644. *See also* Supplementary Report List, No. 129.

—— —— Cr. Coal Syndicate's Bores. *See under* Coal Bores.

—— —— Tin Extd. Mine, Eureka Cr., Stannary Hils. *Min.Ref.* Cassiterite, *see* 844; Chlorite, 1430; Turgite, 7891.

—— —— Waterhole, 23 miles S.byW. of Cloncurry. *Min.Ref.* Manganese-dioxide, *see* 6390.

Black Sand—

Note: Deposits of black sand occur in several of the bays and estuaries along the Queensland coast. Some of the deposits contain magnetite, ilmenite, and other iron ores, but many are made up of a hard quartz sand mixed with a large amount of a hydrous black coaly substance. The appearance of this black sand-rock at a distance gives the impression that it is coal, and in consequence many misleading reports have been circulated to the effect that coal seams have been seen on the shores of the mainland and on a number of islands.

412. —— ——. Bribie Passage, Caloundra Hd., 45 miles N. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Analysis:* Shows absence of Phosphates, Rare Earths, Platinum, and Tin; traces of gold and silver. *Ref.* B.D.

Black Snake Goldfield—

Situation: *See maps*, Pls. 4, 5. 10 miles S. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. Centre—about *Lat.* 26° 13′ S. *Long.* 152° 19′ E.

Discovery: Gold specimen was found here in 1852.

Population: Included with Gympie. Field: Unproclaimed.

Mineral Statistics: *Included in* "Other Goldfields." *See tables and diagram*, Pls. 36, 46, 46a, 47.

Min.Ref.: **Gold**, 4386-4395; Silver, 7533-7539; Mercury, 6551; Lead (Galena), 3068-3072; Copper—(Azurite) 258, (Copper) 1860-1863, (Copper Carbonate) 1964-1966, (Copper, native) 2014, (Copper Oxide) 2055, (Copper Pyrites) 2318-2320, 2327, (Redruthite) 7305, (Tenorite) 7743; Nickel, 6909-6910; Antimony (Stibnite), 7653; Manganese (Dioxide), 6486-6488; **Cobalt**, 1836-1837, (Asbolane) 120, 122, 123; Zinc-Blende, 8209; Iron—(Hematite), 4802, 4803, (Iron Pyrites) 5440-5444, (Ironstone) 5632, (Magnetite) 6062, (Mispickel) 6807-6809, (Pyrrhotite) 7164. Other Minerals—Chrysotile, 7379; Felspar, 2648; Kyanite, 5716; Mica, 6564; Schorl, 7877; Tourmaline, 7873.

Geological Note: Gold-bearing reefs occur in or near the edge of a porphyrite mass, and between this mass and an altered basic volcanic rock there are some well-defined copper-bearing lodes. In serpentine, close to slate, irregular veinlets occur in a talcose rock carrying cobalt, this metal also being found in masses of an earthy cobalt-manganese wad. *See* G.S.Q.P. Nos. 28 and 38 for details.

Geological Publications: Reports—Nos. 28 (1886), 38 (1887), 79 (1892), 169 (1901). *See under* Geol. Sur. Pub. List for title. *See also* short note G.S.Q.P. No. 207, p. 14 (1907).

Warden: Stationed at Gympie.

Inspector of Mines: Stationed at Gympie.

Black Snake Lead, 2 miles N.W. of Clermont. *Min.Ref.* Gold (alluvial), *see* 3319.

—— —— P.C., Croydon. *Min.Ref.* Gold, *see* 3483; Graphite, 4574; Silver, 7425.

—— —— Reef, Normanby Goldfield. *Min.Ref.* Gold, *see* 4121.

—— —— Mine and Reef, Black Snake Goldfield. *Min.Ref.* Asbolane, *see* 120; Gold, 4386; Iron Pyrites, 5440; Silver, 7533.

—— Spring Cr., Nebo. *Min.Ref.* Cinnabar, *see* 1547.

—— Star Lease (116), Kangaroo Hills Mineral Feld. *Min.Ref.* Cerussite, *see* 1233; Chrysocolla, 1526; Copper Carbonate, 1923; Galena, 2958; Garnet, 3126; Magnetite, 6016; Manganese-dioxide, 6434.

—— —— South Lease (199), Kangaroo Hills Mineral Field. *Min.Ref.* Galena, *see* 2959; Magnetite, 6017; Manganese-dioxide, 6435; Minium, 6599.

Black Tin. *Var. of* Cassiterite, *which see.*

Black Watch Reef, Scrub Paddock Diggings. *Min.Ref.* Azurite, *see* 242; Calcite, 481; Copper Pyrites, 2137; Galena, 2730; Gold, 3625; Iron Pyrites, 5007; Marcasite, 6500.

—— —— (Half-mile E. 30° N. of), Scrub Paddock Diggings. *Min.Ref.* Gold, *see* 3625a; Hematite, 4700; Iron Pyrites, 5008.

—— Waterhole, Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 754; Gold, 3173.

Black Water Hole Cr., nr. Hazledean, S.W. of Mackay. *Min.Ref.* Bismutite, *see* 409; Coal, 1702; Copper Pyrites, 2271; Garnet, 3132; Gold (alluvial), 3275; (reef), 4118; Hematite, 4758; Magnetite, 6023; Mispickel, 6759; Silver, 7498; Zircon, 8222.

Black's Cr., flows E. into Stockyard Cr., 30 miles S.W. of Mackay. *Min.Ref.* Coal, *see* 1643.

Blackall Bore. *See under* Artesian Bores. Nos. 8, 170.

—— Municipal Council's Bore. *See under* Artesian Bores. No. 130.

Blackall Range, N.N.W. of Brisbane. *Min.Ref.* Chalcedony, *see* 1352; Coal, 1711, 1711a; Galena, 3074; Gold (alluvial), 3411; (reef), 4417a; Iron Pyrites, 5451; Manganese-dioxide, 6489; Opal, 6967a; Silver, 7541, 7542. *See also under* Govt. Ming. Jour. Report, No. 22.

Geological Note: The Range is made up of granite, slate, schist, sandstone, basalt, and acidic lavas, the principal rocks being basalt and slate, the former covering the top of the ranges, the latter being exposed in the ravines and lower portions of the western slopes. The eastern flank of the range is Walloon Formation (Trias-Jura), in which small coal seams are reported to occur.

Blackbull Bore. *See under* Artesian Bores. No. 185.

Blackbutt. *See maps*, Pls. 6, 7. Blackbutt Range, 25 miles S. of Nanango. *Lat.*, 27°. *Long.*, 152°. *Min.Ref.* Bismite, *see* 316; Chlorite, 1463; Copper Pyrites, 2272A; Galena, 3027; Gold, 4191; Hematite, 4773; Iron Pyrites, 5330; Ironstone, 5606; Limonite, 5897; Malachite, 6343; Manganite, 6498; Massicot, 6544; Mispickel, 6773; Zinc-Blende, 8173A.

Blackeye Spring (4 miles N. of), McKinlay, S.E.byE. of Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2060; Iron Pyrites, 4917; Limonite, 5739, 5740; Redruthite, 7201.

—— —— (Ten miles N. of) McKinlay. *Min.Ref.* Hematite, *see* 4666; Ilmenite, 4879.

Blackfellow's Cr., flows N. into Tenthill Cr., 10 miles S. of Gatton. *Min.Ref.* Coal, *see* 1721.

—— Gully, 2-Mile Cr. Diggings, Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3182; (reef), 3475.

—— Cr., br. of Lynd R., 40 miles S.W. of Almaden Rail. Stn. (Chillagoe line). *See maps*, Pls. 8, 9, 22. *Min.Ref.* Bismutite, *see* 382; Molybdenite, 6825; Wolfram, 7935.

—— Gully, Morinish Goldfield. *See maps*, Pls. 2, 3. Gold discovered here in 1867. *Min.Ref.* Copper Pyrites, *see* 2297; Galena, 3061; Gold, 4335; Zinc-Blende, 8204. *See also under* Govt. Ming. Jour. Report, No. 23. *See also* Supplementary Report List, No. 7.

—— Reef, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3839.

Blackheath Colliery, Bundamba, Ipswich. *See maps*, Pls. 6, 7, 25. *Min.Ref.* Coal, *see* 1730B.

Blacklead. *Syn.* Graphite, *which see.*

Blacksmith's Gully, nr. Machine Cr., S. of Gladstone. *Min.Ref.* Asbestos, *see* 108.

Blackstone Bores. (No record). *See* Pl. 25. *See* note about Ipswich Coalfield *under* Coal Bores.

Blackwater, 118 miles (by rail) W.byS. of Rockhampton. *See* Pl. 33. *Lat.*, 23° 32′ S. *Long.*, 148° 55′ E. *Min.Ref.* Opal (common), *see* 6983. *Railway Base* for Mammoth Coal Mine.

Bladensburg Sub-artesian Bores. *See under* Artesian Bores. No. 171.

Blades Sub-artesian Bore. *See under* Artesian Bores. No. 352.

Blair Athol Coal Mines. *See maps*, Pls. 10, 11. Eleven miles (by rail) N.W. of Clermont. *Lat.*, 22° 37′ S.; *Long.*, 147° 34′ E. Includes Blair Athol, Blair Athol North, Blair Athol Extended, Newcastle, and other leases. *Min.Ref.* Alunogen, *see* 5; Coal, 1665-1671; Turgite, 7899. *See also under* Govt. Ming. Jour. Report, No. 115. *See under* Clermont for Geological and other notes.

—— —— Colliery, Clermont Coalfield. *Min.Ref.* Coal, *see* 1666. *See also under* Govt. Ming. Jour., Report No. 115.

Blair Prov. Goldfield, 10 miles E.byS. of Gore Rail. Stn. (Goondiwindi line). Gold discovered on 12th April, 1905. *Min.Ref.* Gold, *see* 3831A. [Ceased to be a Prov. Goldfield on 15th January, 1906.]

Blair's Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1041; Turgite, 7898.

Blane (Wm.). On the Conditions and Modes of Working on the Queensland Goldfield. Q.G.M.J., vol. 2, p. 207 (1901).

Blantyre (Warreah) Bore. *See under* Artesian Bores. No. 334. *See also* Warreah *under* Coal Bores.

Blantyre Coal Mine, nr. Warreah Rail. Stn. *Min.Ref.* Coal, *see* 1709E.

Blende. *Syn.* Zinc-Blende, *which see.*

Blenheim Stn., Bowen R., S.byW. of Bowen. *Min.Ref.* Chalcedony, *see* 1349; Coal, 1645.

—— and Mt. Leslie (between), Bowen R., S.byW. of Bowen. *Min.Ref.* Coal, *see* 1645.

Blind Sub-artesian Bore. *See under* Artesian Bores. No. 229.

Blond and Wright's Seam, Tivoli, Ipswich. *Min.Ref.* Coal, *see* 1752.

Bloodstone. *Var. of* Chalcedony, *which see.*

Bloodwood Paddock Sub-artesian Bore. *See under* Artesian Bores. No. 432.

Bloodworth Reef (Min. Sel. 2447), Kilkivan. *Min.Ref.* Cinnabar, *see* 1550.

Bloomfield Bores. *See under* Artesian Bores. No. 579.

—— River. Heads at Peter Botte Mt. (Macalister Range), and flows N.E. into Weary Bay, 14 miles N.N.W. of Cape Tribulation, and 30 miles S.S.E. of Cooktown. Length, about 42 miles.

Bloomfield River Tin Field, 42 miles S. of Cooktown. *See maps,* Pls. 8, 9. Discovered about 1885. *Min.Ref.* Cassiterite, *see* 828.

Geological Note: The rocks in this locality consist of slates, &c., of Gympie Formation (Permo-Carboniferous) and granite, the latter forming large intrusive masses in the former. Stream tin is obtained from alluvial deposits in the flats and gullies. *See* G.S.Q. Pub. No. 150 for notes. *See also* Supplementary Report List, No. 81.

Blowfly Bore. *See under* Artesian Bores. No. 158.

Blue Bag Shaft, Glassford Cr. Copper Mine, S. of Gladstone. *Min.Ref.* Actinolite, *see* 4865; Copper Pyrites, 2285; Epidote, 2601; Hematite, 4784; Magnetite, 6037; Malachite, 6353.

—— Bell Copper Lease (609), Pioneer Group, Cloncurry. *Min.Ref.* Redruthite, *see* 7242; Tile ore, 2520.

—— —— (226), Kangaroo Hills Mineral Field. *Min.Ref.* Bornite, *see* 422; Cerussite, 1234; Copper Carbonate, 1924; Galena, 2960.

—— —— Mine, Amamoor Cr., S.W. of Gympie. *Min.Ref.* Azurite, *see* 263; Calcite, 560; Copper Pyrites, 2332; Galena, 3068; Iron Pyrites, 5439; Malachite, 6375; Tetrahedrite, 7779; Zinc-Blende, 8208. *See also under* Gov. Ming. Jour., Report No. 83.

—— —— Silver Mine, Montalbion. *Min.Ref.* Silver, *see* 7451.

—— —— P.A., 32 miles from Gympie. *Min.Ref.* Copper Pyrites, *see* 2320A; Gold, 4415; Silver, 7540.

—— Ground, Black Ridge, Clermont. *Min.Ref.* Gold (alluvial), *see* 3297.

Blue Iron Earth. *Syn.* Vivianite, *which see.*

Blue Jacket M.L. (632), Mt. Hope Group, Cloncurry. *Min.Ref.* Atacamite, *see* 132; Calcite, 493; Copper (native), 1997; Copper Pyrites, 2205; Cuprite, 2451; Limonite, 5865; Malachite, 6266; Redruthite, 7289; Tile ore, 2556.

—— —— Reef, Carron, Croydon Goldfield. *Min.Ref.* Gold, *see* 3477; Iron Pyrites, 4933.

—— Lagoon Bore. *See under* Artesian Bores. No. 324.

—— Mt., Funnel Cr., Nebo. *Min.Ref.* Cobalt, *see* 1835; Copper Ore, 2042.

—— —— Cr., trib. of Kettle Swamp Cr. *See* Pl. 30. Rises on the Dividing Range, flows S.W. for about 2½ miles, and falls into Kettle Swamp Cr. 2 miles E.N.E. of Stanthorpe. *Min.Ref.* Cassiterite, *see* 975; Molybdenite, 6846.

—— —— Tin Mine, Stanthorpe. *Min.Ref.* Cassiterite, *see* 975.

Blue Mts., par. of Hazledean, S.byW. of Mackay. *Min.Ref.* Azurite, *see* 229; Copper Pyrites, 2251; Galena, 3007-3008; Iron Pyrites, 5298; Malachite, 6319-6320; Zinc-Blende, 8167.

Blue Peter Lease, and No. 1 E., Blue Peter Reef, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2866; Gold, 3883; Iron Pyrites, 5147; Zinc-Blende, 8117.

—— —— Reef, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, Iron Pyrites, Zinc-Blende, *see* 3948.

Blue Vitriol. *Syn.* Chalcanthite, *which see.*

Bluebush North and South Bores. *See under* Artesian Bores. No. 195.

Bluey Cr. Bore. *See under* Artesian Bores. No. 161.

Bluff Bore. *See under* Artesian Bores. No. 195.

Bluff Coal Mines, Bluff Rail. Stn. (Central line), 107 miles (by rail) W. of Rockhampton. *See* Pl. 33. Opened 1894. *See maps,* Pls. 10, 11, 33.

Geological Note: The rocks in and around the mines comprise sandstones and shales belonging to the Dawson-Mackenzie Coal Measures of Upper Bowen Formation (Permo-Carboniferous). They contain semi-bituminous coal of good quality and of workable thickness. *See* G.S.Q. Pub. No. 155 for position and maps.

—— Colliery, Bluff Rail. Stn. (Central line). *Min.Ref.* Coal, *see* 1685, 1686.

—— Lead, Capeville, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3272A.

—— Rail. Stn., 107 miles W.byS. of Rockhampton. *Railway Base* for Bluff Coal Mines.

—— Stn. (nr.), S.S.E. of Charters Towers. *Min.Ref.* Anglesite, *see* 42A; Cerussite, 1226; Copper Pyrites, 2220; Galena, 2922; Gold, 3976A, 3977; Iron Pyrites, 5219; Massicot, 6537A; Silver, 7480A.

Blume's Sel. Sub-artesian Bores. *See under* Artesian Bores. No. 172.

Blyth's (H.B.) Bore. *See under* Artesian Bores. No. 196.

Board of Examiners for Mining Managers (estab. 1900). *Members:* C. F. V. Jackson, State Mining Engineer (chairman); J. B. Henderson, Gov. Analyst; R. Hunter, Inspector of Mines. *Secretary:* W. W. Alder, Mines Dept., Brisbane.

There are two forms of certificates granted, namely:—Certificates of Competency (1st and 2nd Class), and Certificates of Service.

Annual Examinations for Certificates of Competency are held on the leading mining fields of Queensland, and the date of such examinations are notified by advertisement.

Candidates must give one month's notice in writing of their intention to present themselves for examination, to the Chairman of the Board of Examiners for Mine Managers, Mines Department, Brisbane; and such notice must be accompanied by the Warden's receipt for the fee of two guineas for first-class and one guinea for second-class.

Separate examinations are held for First-class and Second-class Certificates in Metalliferous mining, and for First-class and Second-class Certificates in Coal-mining.

Any candidate for a First-class Certificate, who fails to satisfy the Board that he is entitled to such a Certificate, may, if the Board think it advisable, be granted a Second-class Certificate.

SUBJECTS FOR EXAMINATION.

First Class Certificates.—Knowledge of the Mines Regulation Act of 1910; Arithmetic; Methods of Working Mines; Mining Machinery; Timbering; Ventilation; Blasting and Explosives; Drainage; Geology as applied to Mining; Applied Mechanics, Elements of Statics and Dynamics; Mine Surveying and Plans; Mill Work, including the Reduction and Treatment of Ores.

Candidates for First-class Certificate in Coal-mining, in lieu of mill work, are examined in the Nature and Composition of Dangerous Gases met with in Coal Mines, and in Coke-making.

Candidates before receiving a First-class Certificate must satisfy the Board that they have served either for two years as Manager, Under-Manager, or Shift-boss, or for five years as a Working Miner; but candidates may come up for their examination at any time.

Second Class Certificates.—Knowledge of the Mining Act of 1898 and Regulations to date; Arithmetic as applied to ordinary Calculations of Weights and Measures, and Wages, and to any other Calculations connected with an Under-Manager's duties; Methods of Working Mines; Mining Machinery; Timbering; Ventilation; Blasting and Explosives; Drainage.

Candidates for Second-class Certificate in Coal-mining will also be examined in the Nature and Composition of Dangerous Gases met with in Coal Mines.

Candidates before receiving a Second-class Certificate must satisfy the Board that they have served for one year as a Working Miner.

Syllabus.—The Syllabus of the subjects for examination, together with a list of the text books advisable to study and all other information, may be obtained from the Secretary of the Board, Department of Mines, Brisbane.

Boat Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 161.

—— —— Workings, 7 miles W. of Gladstone. *Min.Ref.* Manganese-dioxide, *see* 6466; Psilomelane, 7099.

Boatman Bores. *See under* Artesian Bores. No. 173.

Bobby Dazzler Reef, Tabletop, Croydon Goldfield. *Min.Ref.* Gold, *see* 3547.

Bob's Cr., 4 miles E.N.E. of Bouldercombe. *Min.Ref.* Galena, *see* 3060; Gold, 4337; Ironstone, 5621.

Boden, Little J., Bore. *See under* Artesian Bores. No. 413.

Bog Iron Ore. *Var. of* Limonite, *which see.*

Bog Manganese. *See* Asbolane, Manganese-dioxide, Psilomelane.

Boggy Cr. Bore. *See under* Artesian Bores. No. 339.

Bogside Colliery, Bundamba Coal Area. *Min.Ref.* Charcoal, *see* 1409; Coal, 1731.

Bogunda Sub-artesian Bores. *See under* Artesian Bores. No. 174.

Bohle R., 7 miles W. of Townsville. *Min.Ref.* Halite, *see* 4657.

Boileau's Bore. *See under* Artesian Bores. No. 356.

Boiler Inspection. *See* Inspection of Machinery and Scaffolding Act, 1908.

Boioro, Brit. New Guinea. *Min.Ref.* Limestone, *see* 701.

Bola Gully, Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

Bolwarra Co., Cook Dist. *See map,* Pl. 8.

Bompa Goldfield—

SITUATION: *See maps,* Pls. 2, 3, 34. 44½ miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. Centre about *Lat.* 25° S.; *Long.* 151° 30′ E.

DISCOVERY: 1888.

PROCLAMATION: First and only one, 10th January, 1890, as follows:—Commencing at the north corner of portion 1v, Bompa Resumption, and bounded thence on the south-east by that portion bearing south-westerly about two and a-half miles; on the south-west by a line bearing north-westerly about four and a-half miles to Blackman Creek at a point about one mile above its junction with the Boyne River; on the north-west by Blackman Creek upwards to the range forming the eastern watershed of the Boyne River; and thence on the north-east by that range southerly about four miles in a direct line to the point of commencement.

AREA: 7,680 acres (12 sq. miles).

MINERAL STATISTICS: Gold, *included in* Other Goldfields, in *stat. tables,* Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: **Gold,** 4246-4251; Lead (Galena), 3039; Copper (Copper Pyrites), 2283, 2284; Zinc-Blende, 8182, 8183; Iron (Iron Pyrites) 5359-5361, (Mispickel) 6786.

GEOLOGICAL NOTE: The country rock is granite, portions of which are hornblendic and pyritous. There are gold-bearing quartz reefs in the granite, and all are confined to an area of 6 or 7 square miles. *See* G.S.Q. Pub. No. 58 for details.

GEOLOGICAL PUBLICATION: Report—No. 58 (1890), *see* Geo. Sur. Pub. List for title. *See also* Supplementary Report List, No. 20.

WARDEN: Stationed at Gladstone. INSPECTOR OF MINES: At Rockhampton.

Bompa Mineral Field. Now Glassford Cr. Mineral Field, *which see.*

PROCLAMATION: First and only one, 15th September, 1898, superseded by Proclamation of 24th October, 1900, under which this field is included in the Glassford Creek Mineral Field.

MINERAL STATISTICS: *See under* Glassford Cr. MINERAL REFERENCE: *Ditto.*

Bompa Syndicate Copper Mines. *See* Glassford Cr. Copper Mines. *See* Supplementary Report List, No. 77.

Bompa Silver-Lead Mine, 53 miles S. of Gladstone. *Min.Ref.* Anglesite, *see* 62; Cerussite, 1297; Galena, 3041; Gold, 4260; Hematite, 4782; Limonite, 5906; Massicot, 6549; Minium, 6643.

GEOLOGICAL NOTE: Rocks include altered sedimentaries, serpentine, and acidic intrusives, with granite 2 or 3 miles distant. Lodes, both large and small, occur in the altered rocks, the large ones carrying pyrites, the small ones, 2 or 3 feet thick, containing silver and lead in irregular patches. *See* Supplementary Report List, No. 89.

Bon Accord Sub-artesian Bores. *See under* Artesian Bores. No. 175.

Bonanza Silver Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 45; Cerussite, 1262; Ironstone, 5570; Massicot, 6540; Minium, 6607.

—— North (*ante*). *Min.Ref.* Ironstone, *see* 5570A; Minium, 6608.

Bonanza and Norseman Leaders, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3821.

Bong Bong Copper Leases. *See under* Duffy's and O'Brien's Copper Mines.

Bonnet Reef, Strathalbyn Goldfield. *Min.Ref.* Chalcanthite, *see* 1333; Copper Pyrites, 2235.

Bonney's Sel. 96v, Par. of Maleny. *Min.Ref.* Manganese-dioxide, *see* 6489.

Bonnie Doon Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2867; Iron Pyrites, 5148; Gold, 3884.

—— —— Reef (*ante*). *Min.Ref.* Galena, Gold, and Iron Pyrites, *see* 3949.

—— —— Stn., 6 miles N.W. of Blackwater Rail. Stn. *Min.Ref.* Chromite, *see* 1474.

—— Downs Bore. *See under* Artesian Bores. No. 387.

—— Dundee Colliery, Bundamba. *Min.Ref.* Coal, *see* 1732, 1733.

—— —— Lease, Charters Towers. *Min.Ref.* Galena, *see* 2868; Gold, 3885; Iron Pyrites, 5149.

—— —— Silver-Lead Mine, Sellheim Mineral Field. *Min.Ref.* Cerussite, *see* 1288; Galena, 3012; Iron Pyrites, 5317; Zinc-Blende, 8169.

—— —— Silver Mine, One Mile, Ravenswood. *Min.Ref.* Galena, *see* 2932; Zinc-Blende, 8151.

—— —— Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1042.

Bonnybrook Lease (178), Kangaroo Hills. *Min.Ref.* Azurite, *see* 220; Cerussite, 1235; Copper Carbonate, 1925; Galena, 2961; Malachite, 6299; Manganese-dioxide, 6436.

Bonser P.P.A. (133), 50 miles S.S.W. of Mackay. *Min.Ref.* Azurite, *see* 239A; Malachite, 6342.

Bonus Downs Sub-artesian Bore. *See under* Artesian Bores. No. 176.

Boolay's P.P.A. (268), Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3691.

Boolboonda Goldfield—

Situation: *See maps,* Pls. 4, 5, 35. The Field is about 12 miles N.E. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* Burnett. Centre about *Lat.* 25° 3′ S., *Long.* 151° 41′ E. Discovery: In 1880.

Population: 200 (estimated 1910).

Proclamation: First and only one, 1st December, 1880, as follows:—Commencing at a point bearing 315 degrees and distant 2 miles and 70 chains from the north corner of forfeited Mineral Selection 955, and bounded thence on the north-west by a line bearing 45 degrees 2 miles and 65 chains; on the north-east by a line parallel with the north-east boundary of Mineral Selection 955 bearing 135 degrees 6 miles; on the south-east by a line parallel with the south-east boundary of Mineral Selection 955 bearing 225 degrees 6 miles; on the south-west by a line bearing 315 degrees 6 miles; and again on the north-west by a line bearing 45 degrees 3 miles 15 chains to the point of commencement—exclusive of alienated and reserved lands.

Area: 21,000 acres (nearly 33 sq. miles).

Mineral Statistics: Gold, *included in* Other Goldfields, in *stat. tables,* Pls. 36, 46, 46A, 47.

Mineral References: Gold, 3564-3566; Silver, 7428; Copper—(Copper), 1841, (Copper Ore), 2020, (Copper Pyrites), 2121, 2122.

Geological Notes: The country rock is granite of variable composition, in association with belts of schists and gneiss. Lodes carrying copper and gold occur usually in the granite, but occasionally also in the gneiss and schist. *See* G.S.Q.P. No. 21 for details.

Geological Reports: No. 21 (1885), *see* Geo. Sur. Pub. for title.

Warden: Stationed at Mt. Perry. Inspector of Mines: Stationed at Rockhampton.

—— Hill (*ante*). *Min.Ref.* Copper, *see* 1841; Copper Pyrites, 2121, 2122; Gold, 3564, 3566; Silver, 7428.

—— Lode (*ante*). *Min.Ref.* Copper, *see* 1841; Copper Pyrites, 2121; Gold, 3565.

Boolburra Rail. Stn., 59 miles S.W. of Rockhampton. Railway Base for Dawson Coal Mines prior to the construction of line from the Dawson River to Mt. Morgan.

Boombah Bore. *See under* Artesian Bores. No. 397.

Boomerang Copper Mine, Calcifer. *Min.Ref.* Atacamite, *see* 130; Azurite, 194; Chrysocolla, 1517; Copper Pyrites, 2168; Cuprite, 2434; Diallage, 145; Galena, 2787; Hematite, 4710; Magnetite, 5987; Malachite, 6227; Mispickel, 6701; Tenorite, 7722; Tile Ore, 2549; Zinc-Blende, 8085.

Boomerang Group of Copper Mines, Cloncurry, includes Boomerang, Policeman, Policeman West, and Micawber M. Claims, and Rainbow M. Lease. *Min.Ref.* Azurite, *see* 159; Chrysocolla, 1495; Copper Pyrites, 2072; Cuprite, 2394; Hematite, 4682; Limonite, 5752, 5753; Malachite, 6097-6099; Redruthite, 7212, 7213; Stibnite, 7604; Tetrahedite, 7754, 7755; Tile Ore, 2499.

—— M.C. (162) (*ante*). *Min.Ref.* Azurite, *see* 159; Limonite, 5752; Malachite, 6097; Redruthite, 7212.

—— Lease (186), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1236; Garnet, 3127; Lievrite, 5736; Manganese-dioxide, 6437.

—— Mine (west of), Marble Cr., Calcifer. *Min.Ref.* Copper Carbonate, *see* 1895; Hematite, 4711.

——Reef, Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3664.

Boonah, 35 miles (by rail) S.byW. of Ipswich. *Min.Ref.* Coal, *see* 1722; Kaolin, 5696A; Mineral Water, 6572A; Natrolite, 6901.

Boondooma Co. Burnett Dist. *See map*, Pl. 4.

—— Stn., Burnett R., S.W.byW. of Maryborough. *Lat.*, 26° 12′ S.; *Long.*, 151° 19′ E. *Min.Ref.* Cassiterite, *see* 772; Opal (wood), 7002; Tourmaline, 7817.

Boonmoo, 81 miles (by rail) S.W. of Cairns. *Lat.*, 170° 15′ S., *Long.*, 145° 11′ E. *See maps*, Pls. 8, 9, 22. *Min.Ref.* Azurite, *see* 188; Bismuth (native), 331; Bismutite, 385; Cassiterite, 843; Mispickel, 6687; Molybdenite, 6831; Scorodite, 7364; Wolfram, 7942.

Boonooke Bore. *See under* Artesian Bores. No. 324.

Boorara Run Bores. *See under* Artesian Bores. No. 177.

Booreeco Cr., 30 miles S.W. of Gladstone. *Min.Ref.* Epidote, *see* 2600; Garnet, 3139; Limestone, 666; Wollastonite, 8046.

Boort Sub-artesian Bore. *See under* Artesian Bores. No. 225.

Boortra Bore. *See under* Artesian Bores. No. 416.

Boothill Cr., 50 miles S.S.W. of Mackay. *Min.Ref.* Copper Carbonate, *see* 1952; Gold, 4189; Minium, 6641; Silver, 7505; Steatite, 7694; Tile Ore, 2569.

Bootlace, Miclere, Clermont. *Min.Ref.* Gold (alluvial), *see* 3283.

Border Chief Silver Mine, Jibbinbar. *Min.Ref.* Iron Pyrites, *see* 5105; Silver, 7469.

Boree Bore. *See under* Artesian Bores. Nos. 195, 380.

Borehole Colliery, Bundamba, Ipswich. Operations commenced here in 1895. *Min.Ref.* Coal, *see* 1733A.

Bores for Coal. *See under* Coal Bores for details. *See also under* Coal in Artesian Bores. Records very incomplete.

Boring for Coal, Notes on—*See* List *under* Supplementary Reports, Nos. 3, 72, 100, 126, 132, 139, 144, 145.

—— for Gas. *See under* Gas Bores, *see also* Artesian Bores and Notes, Nos. 387, 406 (2), 439 (2).

—— for Gold. *See under* Gold Bores.

—— for Oil. Oil has not been found in the State, but *see* notes *under* Gas Bores at Glenalvon and Roma.

—— for Water. *See under* Artesian Bores.

Bornite. *Syn.* Erubescite; Variegated copper ore. *Compo.*, Sulphide of copper and iron. *Colour*, copper-red and pinch-beck brown, metallic. Tarnishes quickly to bluish tints. $H = 3$. *Sp.gr.* = 4·4, 5·5. *Contents* (*max.*), Copper 55 per cent.

412A.——. *Assoc.with* Redruthite, Tile Ore, and Iron Pyrites, in quartz. *Loc.* Monakoff M.F. (15), Monakoff Group, Pumpkin Gully, 13½ miles E.N.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, p. 239 (1908).

413. ——. *Assoc.with* Redruthite, Copper Carbonate, Cuprite, Chrysocolla, and Ironstone. *Loc.* Mt. Douglas or Pumpkin Gully Leases, Mt. Douglas, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 153, pp. 6, 7 (1900).

414. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Iron Pyrites, Hematite, Limonite, Muscovite, and Calcite, in schist, slate, and quartz. *Loc.* Timberoo M.L. 716, Timberoo Group, Friedman's Cr., 18 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 172-175 (1908).

415. ——. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in limestone. *Loc.* Centipede M.L. (375), Centipede Group, 53 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 301 and 302 (1908).

416. Bornite. *Assoc.with* Copper Pyrites and Tenorite. *Loc.* Mt. Perry Copper Mine, 67 miles S.W.byW. of Bundaberg, Mt. Perry Rail. line. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* P.R.S.Q., vol. 4, pp. 48, 57 (1887).

417. —— In lode. *Loc.* Manning Mine, 1 and 2 N., Reid's Cr., 4½ miles S. 30° W. of Mt. Perry (*ante*). *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 125, p. 28 (1897).

418. ——. *Assoc.with* Copper Pyrites, Cuprite, Tile Ore, Tetrahedrite, Tenorite, Malachite, Atacamite, Iron Pyrites, and Hematite, in felspar and quartz lode. *Loc.* Ruddygore Mine, Chillagoe Rail. and Mines Ltd., 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 134, pp. 10, 11 (1898).

419. ——. *Loc.* Pirate Lease, Tate R., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 51 (1900).

419A.——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Azurite, Hematite, Limonite, Cinnabar, and Jasper, in quartz and calcite. *Loc.* St. George Copper and Coal Mines, Little R., 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mosman; *Dist.* Cook. *Ref.* G.S.Q. Pub. 222, pp. 21-32 (1910).

420. ——. *Assoc.with* Copper Pyrites, Tetrahedrite, and Malachite. *Loc.* Duchess M.L. (275), Duchess Group, Burke, 65 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.M.

421. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Cuprite, Tenorite, Azurite, Malachite, Chalcanthite, Iron Pyrites, Mispickel, Hematite, Magnetite, Cerussite, Minium, and Zinc-Blende, in quartz lode, in quartzite and porphyry. *Loc.* Mt. Garnet Mines, Return Cr., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

422. ——. *Assoc.with* Copper Carbonate, Cerussite, and Galena, in lode. *Loc.* Blue Bell Lease (226), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

423. ——. *Assoc.with* Chrysocolla, Copper Carbonate, and Mispickel, in chloritic lode. *Loc.* Ingola Tunnel Lease 177, nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

424. ——. In gossany chloritic lode. *Loc.* Mt. Regner Lease 242, Kangaroo Hills, Mineral Field (*ante*). *Assay:* Silver, 35 oz. 18 dwt. 16 gr. per ton; Copper, 30·5 per cent. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

425. ——. *Assoc.with* Copper Pyrites, Cuprite, Tenorite, Copper Carbonate, Iron Pyrites, Ironstone, Galena, and Zinc-Blende, in lode. *Loc.* Mt. Thekla Copper Mine, 4 miles N. of Ewan, Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver = 86 oz. per ton; Copper = 21·37; Lead = 8·65; Zinc = 4 to 5 per cent.; (2) Silver = 22 oz. per ton; Copper = 18·75; Zinc = 4 per cent.; (3) Silver = 121 oz. per ton; Copper = 2·2 per cent. *Ref.* G.S.Q. Pub. 167, p. 7 (1901).

426. ——. *Assoc.with* Malachite. *Loc.* Newton's Shaft, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.M.

427. ——. *Assoc.with* Native Silver, Copper Pyrites, Cuprite, Copper carbonate, and Galena, in lode. *Loc.* True Blue Lease (161), Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver = 60 oz. per ton; Copper = 27·5 per cent.; (2) Silver = 56 oz. per ton; Copper = 31·4 per cent. *Ref.* G.S.Q. Pubs. 82, p. 8 (1892) and 167, p. 11 (1901).

428. ——. *Assoc.with* Copper Pyrites, Tile Ore, Hematite, Cerussite, Galena, and Mispickel, in lode. *Loc.* Wallaroo Lease (162), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 3 oz. 13 dwt. 12 gr. per ton; Copper = 1·7 per cent. *Ref.* G.S.Q. Pub. 82, p. 15 (1892).

429. ——. *Loc.* Western Copper and Silver Mine, Macaulay Cr., Kangaroo Hills Mineral Field (*ante*). *Assay:* Copper = 38 per cent.; Silver = 120 oz. per ton. *Ref.* G.S.Q. Pub. 167, p. 9 (1901).

429A.——. *Loc.* Pine Vale Copper Mine, 9 miles S.byE. of Eton Vale Rail. Stn., 32 miles (by rail and road) S.byW. of Mackay, Mt. Spencer Gold and Mineral Field. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.M. and G.S.Q. Pub. 229, pp. 12-17 (1910).

429B.——. *Assoc.with* Copper Pyrites, in quartz. *Loc.* Christie's Copper Lode, por. 83v, Mia Mia, Cattle Cr., 5 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 229, p. 36 (1910).

430. ——. *Assoc.with* Silver (native) and Tetrahedrite, in quartz. *Loc.* Silver King Copper Mine, between pors. 99v and 83v, Mia Mia, Cattle Cr. (*ante*). *Ref.* O.R.

430A.——. *Assoc.with* Malachite. *Loc.* Silver King Copper Lode, between pors. 99v and 83v, Mia Mia, Cattle Cr. (*ante*). *Ref.* G.S.Q. Pub. 229, pp. 36, 37 (1910).

430B.——. *Assoc.with* Malachite and Limonite. *Loc.* Freedom of Contract No. 2 Mine, between Retreat and Ruby Crs., 6½ miles N.E.byN. of Withersfield Rail. Stn. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 81, p. 4 (1892).

431. ——. *Assoc.with* Gold, Copper Pyrites, Copperas, and Chalcanthite, in diorite. *Loc.* Mt. Clifford Mine, nr. Retreat and Ruby Crs., 9½ miles (by road) N.W. of Anakie Rail. Stn. *Co.* Clermont (*ante*). *Ref.* G.S.Q.P. 127, p. 2 (1898).

432. ——. *Assoc.with* Copper Pyrites, in quartz. *Loc.* Crow's Nest (Ravensbourne), 34 miles (by rail) N. of Toowoomba, 135 miles (by rail) W.byN. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.**

433. ——. *Assoc.with* Iron Pyrites. *Loc.* Frampton Lease, Norton Goldfield, 32½ miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* L.C.B.

434. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Cuprite, Tenorite, Azurite, Malachite, and Ironstone, in crystallised limestone, &c. *Loc.* Mt. Hector Copper Mine, E. side of Dawes Range, 60 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* Q.G.M.J., vol. 4, pp. 174-177 (1903).

435. ——. *Assoc.with* Copper Pyrites, Cuprite, Tenorite, Malachite, Azurite, Galena, Hematite, Magnetite, Zinc-Blende, Garnet, Chlorite, and Calcite. *Loc.* Glassford Cr. Copper Mines, 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne Valley Br. line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 150, p. 5 (1900), and 194, p. 28 (1904).

435A.——. *Assoc.with* Malachite, Azurite, and Limonite, in quartz lode. *Loc.* 4 miles from Mt. Bennett, about 30 miles W.S.W. of Gladstone, Langmorn Goldfield. *Co.* Deas Thompson; *Dist.* Port Curtis. *Assay:* See Ref. *Ref.* A.R., p. 218 (1910).

436. ——. *Assoc.with* Garnet and Wollastonite, as rock mass in altered limestone. *Loc.* Munna Copper Mine, Por. (167), Marodian, Munna Cr., 17 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 179, p. 12 (1902).

Boron (Bo.). *Atom.Wt* = 11·0. *Sp.gr.* = 2·45 (amorphous); 2·68 (crystalline). *Colour*, grey (amorphous var.), colourless (crystalline var.).

USES: Boracic Acid and Borax are used to prevent fermentation in foods, drinks, etc., the latter also being commonly used as a flux in the fire assay of metals, and in enamelling processes.

Boron Silicate. *See* Tourmaline.

Bothwell Bore. *See under* Artesian Bores. No. 167.

Botryoidal Sandstone (allied to Fontainbleau Sandstone), *which see.*

Bottallic Tin Mine, Stanthorpe. *Min.Ref.* Cassiterite, *see* 1032.

Bough Shed Bore. *See under* Artesian Bores. No. 229.

Boulder Cr., 6 miles W.S.W. of Mt. Morgan Rail. Stn. *Min.Ref.* Hematite, *see* 4798; Limonite, 5917; Magnetite, 6037.

—— Gully, Miclere, Clermont. *Min.Ref.* Gold (alluvial), *see* 3284.

—— Hill (*ante*). *Min.Ref.* Gold (alluvial), *see* 3282.

—— Hill Silver-Lead Lode, Mt. Emu Plains Stn. *Min.Ref.* Cerussite, *see* 1188B; Galena, 2712A; Gold, 3561A; Massicot, 6521A.

—— Lease, Jordan Goldfield. *Min.Ref.* Gold, *see* 3768.

Boulia, 204 miles W.byS. of Winton. *Lat.*, 22° 53′ S.; *Long.*, 140° E. *Min.Ref.* Muscovite, *see* 6892.

Boulton's Folly Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 887; Chlorite, 1436; Garnet, 3102.

Boundaries of Geological Formations. *See maps,* Pls. 3, 5, 7, 9, 11, 13, 15, 17, 19, 21.

—— of Goldfields. *See under* name of Goldfield; *also see maps,* Pls. 3, 5, 7, 9, 11, 13, 15, 17, 21.

—— of Queensland. *See map,* Pl. 1. *See also* description under "Queensland."

Boundary Bores. *See under* Artesian Bores. Nos. 211, 229, 269.

—— M.L. 582, Bull Cr. Group, Cloncurry. *Min.Ref.* Chrysocolla, *see* 1511; Copper (native), 1984; Copper Pyrites, 2103; Cuprite, 2410; Limonite, 5803; Malachite, 6160.

—— Tin Claim, Watsonville. *Min.Ref.* Cassiterite, *see* 888; Felspar, 2633.

Bournonite. *Syn.* Antimonial Lead Ore. *Compo.* Sulphide of antimony, lead, and copper. *Colour and Streak*, blackish lead-grey, iron-black. Metallic. *H.* = 2·5—3. *Sp.gr.* = 5·7—5·9. Brittle. *Contents* (*max.*), Lead 42 per cent., Antimony 24 per cent., Copper 13 per cent.

437. ——. *Loc.* Albion Mine, Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

Bowden and Co.'s Sel. 147, Argentine Silver Field. *Min.Ref.* Cerussite, *see* 1263; Gold, 4087; Iron Pyrites, 5282; Mispickel, 6756; Silver, 7491.

Bowden Mineral Field—

SITUATION: *See maps*, Pls. 8, 9. Pascoe R., 24 miles W. of Lloyd Bay, 240 miles N.W. of Cooktown. *Co.* Weymouth; *Dist.* **Cook.** Centre about *Lat.* 12° 30′ S.; *Long.* 143° E.

DISCOVERY: Wolfram discovered by William Bowden on Pascoe River about the end of 1892. *Ref.* A.R.D.M., p. 62 (1911).

POPULATION: 8 (estimated 1910).

PROCLAMATION: First and only one, 23rd August, 1907, as follows:—The whole of the catchment area of the left bank of Canoe Creek and the right bank of Pascoe River, from the confluence of same for a distance of ten miles south-easterly.

AREA: 8,320 acres (13 sq. miles).

MINERAL STATISTICS: Wolfram. *Included in* Cooktown returns. *See tables*, Pls. 42, 46, 46A.

MINERAL REFERENCES: Tin (Cassiterite), 972; Wolfram, 7982; Ironstone, 5537; Coal, 1618.

GEOLOGICAL PUBLICATIONS: None. *See under* Govt. Ming. Jour., Reports Nos. 81, 88.

WARDEN: Stationed at Cooktown.

INSPECTOR OF MINES: Stationed at Croydon.

REPORTS: Inspector's and Warden's monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Bowen (Port Denison)—

SITUATION: *See maps*, Pls. 16, 17. 763 miles N.W.byN. of Brisbane. *Co.* Herbert; *Dist.* Kennedy North. *Lat.*, 20° S.; *Long.*, 148° 14′ E.

PORT for the Normanby, Marengo, Mt. Wyatt, and Happy Valley Goldfields, the Sellheim Mineral Field, and the Bowen River Coalfield.

HARBOURAGE: An harbourage is formed by several islands in the vicinity of the port. A jetty provides berths for vessels of large size, having depths varying from 16½ ft. to 21 ft. at low-water springs.

POPULATION: 4,547 (Census 1911).

RAINFALL: *See under* separate heading.

MINERAL STATISTICS: Gold, *see* Marengo and Normanby Goldfields; Silver and Bismuth, *see* Sellheim Mineral Field.

MINERAL REFERENCE: Magnetite, *see* No. 6014.

GEOLOGICAL NOTE: Bowen is built on recent superficial deposits of sand and silt, but there are many outcrops of granite, gneiss, felsite, porphyry, diorite, and andesite in the vicinity. The granitic rocks make up the main mass of these outcrops, gneiss being present only occasionally. The other rocks form dyke masses which have intruded the granite in all directions. Traces of Wolfram, Molybdenite, and Tin have been found about Bowen, and Amethyst, in fine crystals, occurs in a felsitic dyke on the Don River a few miles distant.

GEOLOGICAL PUBLICATIONS: None on Bowen. Bowen District—No. 181, *see under* Geol. Sur. Pub. List for title; *see also under* Marengo, Normanby, Sellheim, and Bowen River for Nos. of other Reports, &c.

CRUSHING MILLS (on Fields about Bowen): Four batteries (30 stamps).

WARDEN: Stationed at Bowen.

INSPECTOR OF MINES: Stationed at Charters Towers.

CHAMBER OF COMMERCE: Secretary, G. Turner.

GENERAL INFORMATION: Consult *Pugh's Almanac, Queensland Post Office Directory, Post and Telegraph Guide.*

LOCAL NEWSPAPERS: *Port Denison Times and Bowen Advocate; Bowen Independent.*

—— Co. (part) Burnett Dist; (part) Wide Bay Dist. *See map*, Pl. 4.

Bowen Downs Run Bores. *See under* Artesian Bores. No. 178.

Bowen R. *See maps*, Pls. 14, 16. *Min.Ref.* Agate, *see* 1375, 1376; Chalcedony, 1349; Analcime, 7-9; Barytes, 276; Calcite, 507, 509, 510; Clay, 1587; Coal, 1650-1655A; Copper Carbonate, 1946-1948; Copper Ore, 2039; Galena, 2957, 2957B, 3009; Garnet, 3160A; Gypsum, 4625, 4626; Hornblende, 4837; Kalinite, 5669; Kaolin, 5691; Limestone, 653A, 659; Laumonite, 5718-5720; Malachite, 6295, 6296, 6321, 6328; Molybdenite, 6853-6853C; Oil-bearing Shale, 6913; Prehnite, 7075-7077; Silver, 7496, 7496A; Silver (native), 7559; Tetrahedrite, 7772; Thomsonite, 7783, 7784; Wolfram, 8031A.

Bowen River Coalfield, Bowen R. Centre—about *Lat.* 20° 43′ S.; *Long.* 147° 52′ E. *Min.Ref.* Agate, *see* 1376; Analcine, 7-9; Calcite, 507, 508; Clay, 1587; Coal, 1650-1655A; Copper carbonate, 1946-1948; Galena, 2957, 2957A; Gypsum, 4625, 4626; Hornblende, 4637; Kalinite, 5669; Kaolin, 5691; Laumonite, 5718-5720; Limestone, 659; Malachite, 6295, 6296; Oil-bearing Shale, 6913; Prehnite, 7075-7077; Thomsonite, 7783, 7784.

GEOLOGICAL NOTE: The Pelican Creek coal area has recently been examined, and a good workable coal seam, 5 feet thick, has been discovered; while another, of much greater thickness, has been reported to occur. The Measures belong to the Lower Bowen Series of the Permo-Carboniferous.

Bower Bird, 7 miles S.S.W. of Pt. Douglas. *Min.Ref.* Wolfram, *see* 7974.

Bower Bird Goldfield (including Leichhardt Prov. Goldfield)—

SITUATION: *See maps*, Pls. 20, 21. 70 miles N.W. of Cloncurry. *Cos.* Argylla, Brahe, and Tewinga; *Dist.* Burke. Centre—about *Lat.* 20° 5′ S.; *Long.* 139° 35′ E.

POPULATION: (Included in Cloncurry Field).

PROCLAMATION: First, 5th September, 1895. Last, 16th September, 1900. Now included, by proclamation of 9th January, 1913, in the Cloncurry Gold and Mineral Field, *which see.*

AREA: 230,400 acres (360 sq. miles).

MINERAL STATISTICS: *Included in* Other Goldfields, *in tables*, Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: Gold, 3458-3462; Copper (Copper carbonate), 1874, (Copper Pyrites) 2065, 2066, (Malachite) 6088; Iron Pyrites, 4920, 4921; Ironstone, 5485, 5486.

GEOLOGICAL NOTE: The country rock is chiefly quartzite, but mica schist, slate, and limestone are also present, all having a north and south strike. The gold-bearing reefs are large, and form prominent outcrops. *See* G.S.Q. Pub. No. 104 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 104 (1895), 108 (1896). *See under* Geol. Surv. Pub. List for title.

WARDEN and INSPECTOR OF MINES: Both stationed at Cloncurry.

Bower Bird Gully, Little R. *Min.Ref.* Coal, *see* 1617.

—— Lease, 1 mile S. of Clermont. *Min.Ref.* Gold (alluvial), *see* 3327.

Bowler Cr., 3 miles S. of Ashtonville. *Min.Ref.* Azurite, *see* 202B; Cerussite, 1216, 1216A; Copper Carbonate, 1901; Ironstone, 5537A; Limonite, 5849; Malachite, 6248; Minium, 6592; Tetrahedrite, 7768.

Bowra Lease Bore. *See under* Artesian Bores. No. 237.

Bow-water Bore. *See under* Artesian Bores. No. 337.

Box Cr. Bore. *See under* Artesian Bores. No. 255.

Box Flat, 3 miles down Dee R. *Min.Ref.* Gold (alluvial), *see* 3398.

—— —— Colliery, Bundamba. *Min.Ref.* Coal, *see* 1734.

Box Spring, Mt. Datson. *See under* Water Analyses. No. 868D.

Boyd (Par. of) (Por. 158), 4 miles S. of Beenleigh. *Min.Ref.* Gold, *see* 4226A; Silver, 7510A.

Boyd-Moffatt (Par. of), Logan Village. *Min.Ref.* Coal, *see* 1786.

Boyne Goldfield, 12 miles S.E. of Gladstone. Field unproclaimed. Included in Calliope Goldfield, *which see.* *Lat.*, 24°—24° 10′ S.; *Long.*, 151° 10′—151° 20′ E. *Min.Ref.* Gold (alluvial), *see* 3376-3379; Limestone, 669. *Min. Statistics:* Included in "Other Goldfields."

GEOLOGICAL NOTE: The rocks comprise slates, shales, greywackes, and limestones of Gympie Formation (Permo-Carboniferous), all intruded by dykes of diorite and porphyrite. Serpentine and granite also occur in the district. Several reefs outcrop on the field, and many of the watercourses have been worked for alluvial gold. *See* G.S.Q. Pub. No. 21 for details.

Boyne Range. Extends easterly from the Calliope Range, about 25 miles S.E. of Gladstone. *Min.Ref.* Calcite, *see* 527A, 537, 538; Gold (alluvial), 3376-3379, (reef), 4252, 4253.

Boyne R., rises in Dawes Range, 55 miles S. of Gladstone, and flows N. into Port Curtis. Length, about 60 miles. Trib. Glassford Cr. *See* Pl. 34. *Min.Ref.* Coal, *see* 1791; Hematite, 4780; Limestone, 668; Magnetite, 6041.

—— and Futter's Cr. (between), 20 miles S. of Gladstone. *Min.Ref.* Limestone, *see* 667.

Boyne and Stuart Rivers (head of), 24 miles S.W. of Kingaroy Rail. Stn. (Kilkivan line). *Min.Ref.* Ilmenite, *see* 4884; Magnetite, 5982; Zircon, 8217.

Bracker and Party's Mine, Macdonald Prov. Goldfield. *Min.Ref.* Gold, *see* 3842B.

Brackhill (Cronin's) Bore. *See under* Artesian Bores. No. 154.

Bradlaugh Gully and Herberton (between). *Min.Ref.* Opal (wood), *see* 7008.

Bradlaugh Mines, 1 mile E. of Herberton. *Min.Ref.* Cassiterite, *see* 1069; Fluorspar, 2669; Wolfram, 8013.

Bradley's Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 41.

Bradninch Bore. *See under* Artesian Bores. No. 437.

Braeside Bore. *See under* Artesian Bores. No. 154.

Braeside Colliery, Bundamba. *Min.Ref.* Coal, *see* 1735.

Brahe Co., Burke *Dist.* *See map*, Pl. 20.

Branch Cr., trib. of Reid Cr., 4½ miles S.W. of Mt. Perry. *Min.Ref.* Galena, *see* 2722; Gold, 3591; Iron Pyrites, 4993; Mispickel, 6650-6653; Zinc-Blende, 8065.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 117.

Brannigan's Stns. (between Williams and Endeavour R.), nr. Cooktown. *Min. Ref.* Lievrite, *see* 5735.

Brassall (Par. of) (Pors. 286, 293, and 333), Pine Mt. *Min.Ref.* Turgite, *see* 7900; Opal (common), 6989.

—— (Por. 292), Pine Mt. *Min.Ref.* Limonite, *see* 5900.

Brayford's Sel. (137), 1½ miles N. of Beaudesert. *Min.Ref.* Coal, *see* 1779.

Breadalbane Bores. *See under* Artesian Bores. No. 179.

Break o' Day Reef, Table Top, Croydon Goldfield. *Min.Ref.* Gold, *see* 3547

Breakfast Cr. Opal Mines, 48 miles N.W. of Eromanga. *Min.Ref.* Opal (precious), *see* 6946A.

Breedon Sub-artesian Bore. *See under* Artesian Bores. No. 245.

Brenda Bore. *See under* Artesian Bores. No. 180.

Brennan's Flat, 3 miles S.S.E. of Calliope. *Min.Ref.* Gold (alluvial), *see* 3381; Limestone, 670.

Brere's Claim, Pikedale Cr., nr. Stanthorpe. *Min.Ref.* Cassiterite, *see* 997; Iron Pyrites, 5109; Wolfram, 7989.

Brewery Cr., S.W. of Copperfield. *Min.Ref.* Gold, *see* 4162.

Brewery Hill, Nigger Cr., nr. Herberton. *Min.Ref.* Cairngorm, *see* 7180; Cassiterite, 1106; Opal (common) 6976, (wood) 7006.

Bribie Island, 45 miles N. of Brisbane. *Lat.*, 26° 48′—27° 6′ S. *Long.*, 153° 10′—150° 15′ E. *Min.Ref.* Kaolin, *see* 5695. *See also under* Gov. Mining Journal, Report No. 86.

GEOLOGICAL NOTE: Most of the island is made up of deposits of loose sand, but in places there are outcrops of a soft black carbonaceous sandstone apparently of recent formation. Coal has been reported to occur on the island, but no outcrops of coal measures have been recorded. If coal exist, probably it would be of the Walloon type. Beds, probably belonging to the Walloon series of the Ipswich Coal Measures (Trias-Jura), occur below the sandstone, but up to the present no productive coal seams have been discovered in them.

Bribie View Bore. *See under* Coal Bores. *See* Supplementary Report List, No. 126.

Brickfield Gully, nr. Lady Mary Mine, Gympie. *Min.Ref.* Gold (alluvial), *see* 3412; Platinum, 7074.

Brick Clays. *See under* Clay and Kaolin.

Briè-briè Bore. *See under* Artesian Bores. No. 324.

Brigalow Sub-artesian Bore. *See under* Artesian Bores. No. 87.

Brigham Young (Todman's Tapautohaunga) Mine, Norton Goldfield. *Min.Ref.* Galena, *see* 3045; Gold, 4267; Iron Pyrites, 5368; Malachite, 6357; Silver, 7519; Zinc-Blende, 8188.

Brighton Bore. *See under* Artesian Bores. No. 406.

—— Co. Gregory North Dist.; *see map*, Pl. 20.

—— Downs Run Bores. *See under* Artesian Bores. No. 181.

Brilliant Copper M.C. 159, Timberoo Group, Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2098; Göthite, 4563; Limonite, 5792; Malachite, 6154; Tile Ore, 2527A.

—— M. Lease (588), Tharsis Group, Cloncurry. *Min.Ref.* Chrysocolla, *see* 1510; Copper Pyrites, 2097; Limonite, 5791; Malachite, 6151; Redruthite, 7249; Turgite, 7882.

—— Block Gold Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2869; Gold, 3886; Iron Pyrites, 5150.

—— Central Lease (*ante*). *Min.Ref.* Galena, *see* 2870; Iron Pyrites, 5151; Gold, 3887.

—— Extended Lease (*ante*). *Min.Ref.* Galena, *see* 2871; Gold, 3888; Iron Pyrites, 5152.

—— P.C. Lease (*ante*). *Min.Ref.* Galena, *see* 2872; Iron Pyrites, 5153; Gold, 3889.

—— and St. George Utd. Lease (*ante*). *Min.Ref.* Galena, *see* 2873; Iron Pyrites, 5154; Gold, 3890.

—— Worcester and Victory Lease (Clarks) (*ante*). *Min.Ref.* Galena, *see* 2877; Gold, 3895; Iron Pyrites, 5158.

—— Mine, Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2815; Gold, 3805; Iron Pyrites, 5088.

—— Reef, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, Iron Pyrites, *see* 3950.

—— ——, Lane's Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3715.

—— ——, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

—— ——, Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2815; Gold, 3805, 3816; Iron Pyrites, 5088.

—— ——, Big Hill, Talgai Goldfield. *Min.Ref.* Gold, *see* 3861, 3862.

—— North Tin Lease, Stanhills Tin Field (includes Ivanhoe and Newchum Mines). *Min.Ref.* Cassiterite, *see* 760, 762; Galena, 2691; Graphite, 4571.

—— No. 1 Claim (*ante*). *Min.Ref.* Cassiterite, *see* 757.

—— P.C. Mine (*ante*). *Min.Ref.* Cassiterite, *see* 756, 758; Chlorite, 1419; Copper Pyrites, 2067; Galena, 2689; Iron Pyrites, 4922; Zinc-Blende, 8050.

Bringalilly Cr., br. of Canning Cr., 23 miles N. of Inglewood. *Min.Ref.* Coal, *see* 1628. *See also under* Gov. Mining Journal, Report No. 14.

Brisbane (Capital of Queensland).

Situation: *See maps*, Pls. 6, 7. *Lat.*, 27° 33′ S.; *Long.*, 153° 0′ E.

Discovery: Brisbane River was discovered by Oxley on June 2nd, 1823.

Port for Ipswich Coal Fields. Other than coal, no mineral products are exported from Brisbane except those received for transhipment.

Harbourage: The Brisbane River has a minimum depth of 26 feet at high water spring tides between Moreton Bay and the wharves, a distance of 18 miles.

Population: North Brisbane, 18,005; South Brisbane, 18,178. Total, 36,183.

Rainfall: *See under* separate heading.

Geological Note: The rocks in and around Brisbane comprise a Devonian Series of schists, slates, and shales, and a Mesozoic Series of sandstones, tuffs, and shales. The old Series are traversed by diorite and basalt dykes, the latter also penetrating the Mesozoic rocks. Quartz veins occur numerously in certain belts, and although not in payable quantities, gold has been found in a large number of them. The Mesozoic rocks contain coal, and at Nundah in these measures coal has been found which is of workable thickness and good quality. At Queensport several small coal seams are exposed on the bank of the Brisbane River.

Mineral References: Coal, *see* 1771A; Opal (common), 6991, 6992; Rock Crystal, 7196; Selenite, 4646; Turquoise, 7903; Vanadium, 7915.

Chamber of Commerce: Secretary, W. J. Weatherill.

Stock Exchange: Secretary, V. C. Hoge.

Technical College: *See* separate heading.

University of Queensland: *See* separate heading.

Museums: (1) Geological Survey Museum (minerals, rocks, fossils); (2) Queensland Museum (minerals, rocks, fossils, &c., &c.).

General Information: Consult *Pugh's Almanac; Queensland Post Office Directory; Queensland Post and Telegraph Guide.* Official monthly news, *Queensland Government Mining Journal.*

Local Newspapers: (daily) *Courier; Telegraph; Daily Mail; Standard;* (weekly) *Queenslander; Week.*

Brisbane River. Heads at the Cooyar and Jimna Ranges, flows south-easterly for about 150 miles, thence 42 miles north-easterly, passing through Brisbane to Moreton Bay. The distance from the mouth of the river to Brisbane is about 18 miles. *See* other notes under Brisbane. *Min.Ref.* Coal, *see* 1771A; Chromite, 1477; Ilmenite, 4904.

See Geological Note *under* Brisbane.

—— —— (Upper). *Min.Ref.* Amethyst, *see* 7171.

—— (South). *Min.Ref.* Opal (common), *see* 6991.

Brisbane Claim, Trevethan Cr., Annan R. Tin Field. *Min.Ref.* Cassiterite, *see* 825.

—— Co.'s Tin Dredging Area, Quart-pot Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1000.

—— District Sub-artesian Bores. *See under* Artesian Bores. Nos. 9, 182.

—— United Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1070.

Bristol Bore. *See under* Artesian Bores. No. 388.

Britannia Mine, Canoona Goldfield. *Min.Ref.* Copper Pyrites, *see* 2295A; Galena, 3058A; Gold, 4315A, 4315C; Iron Pyrites, 5398A; Silver, 7527D; Zinc-Blende, 8200A.

—— Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 183.

—— Tin Mine, Quart-pot Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1001; Ilmenite, 4898.

British Empire Mine, Gayndah. *Min.Ref.* Gold, *see* 3629; Silver, 7439.

British New Guinea (Port Moresby), 380 miles N.byE. of Cooktown. *Min.Ref.* Gold (alluvial) 3420-3434, (reef) 4552-4560; Osmiridium, 7058; Mercury (Cinnabar), 1564-1566; Lead (Galena), 3093; Copper (Copper Carbonate), 1970; (Copper Oxide), 2057; (Copper Pyrites), 2333; (Cuprite), 2487; (Redruthite), 7311; Manganese (Dioxide), 6496; (Psilomelane), 7107; Iron (Hematite), 4810; (Ilmenite), 4914; (Iron Pyrites), 5473-5477; (Limonite), 5927-5932; (Magnetite), 6064-6068; Coal, 1831-1834; Graphite, 4611; Limestone, 699, 700-715, 726-731, 737, 738; Marble, 603. Other Minerals: Augite, 144; Beryl, 298; Calcite, 561-562; Calcite (Stalactite), 610-611; Celestine, 1176; Chabazite, 1314; Chert, 1414; Chalcedony, 1366; Felspar, 2649A, 2650; Hornstone, 1394; Mica, 6565; Olivine, 6934, 6935; Sanidine, 7056; Sulphur (native), 7669, 7670; Topaz, 7809, 7810; Zircon, 8228.

Geological Publications: Reports Nos. 55 and 56 (1889), 77 (1891), 85 (1892). *See* Geo. Sur. Pub. List for title.

British Thermal Units. *See* Coal *under* Approximate Analyses, for note about their estimation.

Britomart Bore. *See under* Artesian Bores. No. 338.

Brixton District Bores. *See under* Artesian Bores. No. 184.

—— Rail. Stn. Bore. *See under* Artesian Bores. No. 10.

Broad Arrow, Rigo, British New Guinea, *Min.Ref.* Manganese-dioxide, *see* 6496.

Broad's Sel., South Pine. *Min.Ref.* Gold, *see* 4220.

Broadmount, a seaport of Rockhampton, 24 miles (by rail) E.byS. of that city. *Lat.*, 23° 30′ S.; *Long.*, 150° 45′ E. *Min.Ref.* Gold, *see* 4318.

Geological Note: The rocks in this locality consist of sedimentary strata belonging to the Devonian System, and are intruded by dykes of felsite, andesite, diorite, and rhyolite. At the junction of the igneous and sedimentary rocks, serpentine and inferior asbestos sometimes occur. *See* G.S.Q. Pub. No. 143 for notes.

Harbourage: This port is subject to great variations in the tides, springs rising from 18 ft. to 28 ft. in places, neaps 13 ft. to 20 ft.

Broadmount Bore. *See under* Artesian Bores. No. 240.

Broadsound, 96 miles N.W.byN. of Rockhampton. *Lat.*, 22° 10′ S.; *Long.*, 149° 44′ E. *Min.Ref.* Coal, *see* 1798, 1799; Galena, 3066; Limestone, 687-690; Limestone (fossiliferous), 735; Magnetite, 6048-6050.

—— Coal Deposits. *See under* Styx River for geological note.

Broadwater Bridge, Par. of Bulimba. *Min.Ref.* Coal, *see* 1769. *See also under* Coal Bores.

Broadwater Creek, trib. of Severn R., Stanthorpe. *See* Pl. 30. Rises close to Thulimbah Railway Stn., flows S. for about 10 miles, where it joins Spring Cr., 2½ miles W. of Stanthorpe, to enter the Severn R. Length, about 12 miles. Tribs., Hunt's Gully, Canning Cr., and Reeve's Gully. *Min.Ref.* Amethyst, *see* 7167; Cassiterite, 976; Diamond, 2574; Gold (alluvial), 3247; Hyacinth, 8230; Monazite, 6878A; Sagenite, 7337; Sapphire, 2347; Stannite, 7598; Topaz, 7792; Zircon, 8230.

—— Park, 3 miles N. of Southport. *Min.Ref.* Clay, *see* 1582.

Broken Dam Bore. *See under* Artesian Bores. No. 124.

—— Hill Mine, Cloncurry. *Min.Ref.* Actinolite, *see* 4850; Cuprite, 2384; Hornblende, 4822; Magnetite, 5967; Malachite, 6078; Manganite, 6497; Rhodochrosite, 7313.

—— —— Silver-Lead Lode, Mount Emu Plains Stn. *Min.Ref.* Cerussite, *see* 1188B; Galena, 2712A; Gold, 3561A; Massicot, 6521A.

Broken R., about 50 miles W. of Mackay. *Min.Ref.* Copper Pyrites, *see* 2252, 2252A; Galena, 3003-3006; Garnet, 3133; Gold, 4097-4104, 4107; Hematite, 4756; Hyacinth, 8234; Iron Pyrites, 5289-5295, 5296, 5297; Ironstone, 5583; Malachite, 6318; Mica, 6562; Silver, 7497; Stilbite, 7663; Wolfram, 8034; Zircon, 8234.

—— ——, trib. of Clarke R., 3 miles above Dosey Creek, 108 miles W.N.W. of Charters Towers. *Min.Ref.* Gold, *see* 3256A.

—— ——, trib. of Clarke R., 120 miles W.byS. of Townsville. *Min.Ref.* Limestone, *see* 651.

—— —— Gold and Silver Co.'s Mine, Bee Cr., Diggings. *Min.Ref.* Copper Pyrites, *see* 2252A; Galena, 3003; Gold, 4097A; Ironstone, 5583; Iron Pyrites, 5289; Limonite, 5883A; Turgite, 7898A.

Bromelton (Rafter's Sel.), 5 miles W. of Beaudesert. *Min.Ref.* Coal, *see* 1780.

Bronzite. *Compo.*, Silicate of magnesia and iron. *Colour*, greyish, greenish, brownish. *Lustre*, bronze-like. *H.* = 5·5. *Sp.gr.* = 3·1-3·3.

438. ——. *Loc.* Between Tate and Lynd Rivers, Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra or Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q. vol. 15, p. 63 (1900).

Brooke's (Glenbervie) Bore. *See under* Artesian Bores. No. 358.

Brookfield Cr., 10 miles W.S.W. of Brisbane. *Min.Ref.* Galena, *see* 3035; Gold, 4206, 4207; Iron Pyrites, 5341, 5342; Ironstone, 5610, 5611; Pyrolusite, 7127.

GEOLOGICAL NOTE: Country rocks are contorted schists, in the bedding planes of which there are lenticular veins of quartz; gold occurs in the quartz in association with Iron Pyrites. *See* G.S.Q. Pub. No. 108. *See also* Supplementary Report List, No. 60.

Brooklands No. 2 and No. 3, Junction Cr., about 35 miles E.byN. of Georgetown. *Min.Ref.* Cerussite, *see* 1214; Copper Carbonate, 1899; Redruthite, 7281; Rutile, 7331A.

—— Stn. (*ante*). *Min.Ref.* Bismuth, *see* 320; Muscovite, 6891; Wolfram, 7981.

Brookville (Donnybrook), Ravenswood. *See* Pl. 29.

Brookwood Bore. *See under* Artesian Bores. No. 358.

Brooms (Agnes Vale) Cr., Trib. of Isis R., Burrum Coalfield. *Min.Ref.* Coal, *see* 1810.

Brooya Cr., Mary R. *Min.Ref.* Gold (alluvial), *see* 3409.

Brooyar, N.W.byW. of Gympie. *Min.Ref.* Gold, *see* 4416, 4419, 4548, 4549; Manganese-dioxide, 6494B, 6495; Tourmaline, 7874; Silver, 7543.

Broughton, 10 miles E.byS. of Charters Towers. *Min.Ref.* Galena, *see* 2923A; Gold, 3989.

Brovinia Prov. Goldfield. *See map*, Pls. 4, 5.

SITUATION: Brovinia Cr., near Hawkwood, 50 miles S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. Centre about *Lat.*, 26° S.; *Long.*, 151° 10′ E.

DISCOVERY: It was only in 1886 that a request for a reward was made for the discovery of gold at Brovinia, but gold was known to exist in the locality many years previously.

MINERAL STATISTICS: *Included in* "Other Goldfields." *See* Pls. 36, 46-46A, 47.

MINERAL REFERENCES: Gold (alluvial) 3197, (reef) 3632-3634; Copper (Chrysocolla) 1516, (Malachite) 6205; Tin (Cassiterite), 773; Iron (Ilmenite), 4887; Rutile, 7325; Coal, 1600. Other Minerals: Cairngorm, 7174; Jasper, 5638.

GEOLOGICAL NOTE: The country rocks are mainly quartzites and other altered rocks, but hornblende porphyry is also present. The May Queen and other reefs occur in the latter rock. *See* G.S.Q. Pub. 114 for details.

GEOLOGICAL PUBLICATION: Report—No. 114 (1896). *See under* Geol. Sur. Pub. List for title. *See also under* Government Mining Journal, Report No. 34.

Brown Bore. *See under* Artesian Bores. No. 448.

Brown Coal. *Syn.* Lignite, *see* Coal.

Brown Hematite. *Syn.* Limonite, *which see.*

Brown Iron Ore. *Syn.* Limonite, *which see.*

Browne Sub-artesian Bore. *See under* Artesian Bores. No. 402.

Brown's Bore. *See* Torbanlea *under* Coal Bores.

—— Gully, br. of Sugarloaf Cr., Stanthorpe. Length, about 1$\frac{3}{4}$ miles. *Min. Ref.* Cassiterite, *see* 977-980; Molybdenite, 6847; Wolfram, 7983.

—— M.F. 1807, Mt. Flora G. and M. Field. *Min.Ref.* Chrysocolla, *see* 1534A; Hematite, 4769A; Malachite, 6339C.

—— Plains, 13 miles S. of Brisbane (South Coast Line). *Min.Ref.* Lydianstone, *see* 5656.

Brunner and McNally's Bore. *See under* Artesian Bores. No. 150.

Brussel's Cr., Broadsound. *Min.Ref.* Coal, *see* 1798.

Brutus Bore. *See under* Artesian Bores. No. 160.

Bryan O'Lynn Mine, Charters Towers. *Min.Ref.* Chlorite, *see* 1458; Galena, 2874; Gold, 3891; Iron Pyrites, 5155; Zinc-Blende, 8118.

Buccan Bore. *See* Timber Reserve Bore *under* Coal Bores.

Buchanan's Bores. *See under* Artesian Bores. Nos. 155, 205.

—— Gully, Ravenswood. *Min.Ref.* Gold (alluvial), *see* 3264.

Buck Reef, Ravenswood. *Min.Ref.* Copper Pyrites, *see* 2229; Gold, 4019; Iron Pyrites, 5240; Malachite, 6288; Mispickel, 6747; Tenorite, 7730; Zinc-Blende, 8139.

Buckingham Co. Gregory North Dist.; *see map*, Pl. 20.

Buckland Co. Leichhardt Dist.; *see map*, Pl. 10.

Buckley R. Sub-artesian Bore. *See under* Artesian Bores. No. 157.

Buckley's Shaft, 8 miles S. of Beenleigh. *Min.Ref.* Cacoxenite, *see* 439; Gold, 4224; Mispickel, 6780.

Buderim Mountain, 7 miles E. of Woombye Rail. Stn. *Min.Ref.* Lydianstone, *see* 5655; Opal (common), 6987. *See also under* Gov. Mining Journal, Report No. 22.

Buffalo Bore. *See under* Artesian Bores. No. 439.

Buggeriegar Copper Mine, between Morinish and Ridgelands. *Min.Ref.* Garnet, *see* 3143.

Building Materials. *See* Cement, "Fireclay," Gypsum, Limestone, Pigments, Ornamental Minerals.

Bulgroo Co. Gregory South Dist.; *see map*, Pl. 18.

Bulimba. Par. of (Sel. 318). Coal, *see* 1769.

Bulimba Cr., rises near Mt. Gravatt, flows S.E. and N. into Brisbane R. 8 miles E.byN. of Brisbane. Coal discovered by Geologist Stutchbury on Coxen's land in 1854. *Min.Ref.* Clay, *see* 1578, 1579; Coal, 1773; Gypsum, 4629.

GEOLOGICAL NOTE: The rocks about this creek belong to the Ipswich Coal Measures (Trias-Jura), and contain several small seams of bituminous coal. Slates and schists and other rocks of Devonian Age occur about 2 miles to the west of the creek. *See* Geol. map in G.S.Q. Pub. No. 225 (1909).

—— Road, Brisbane. *Min.Ref.* Selenite, *see* 4646.

Bull Cr., par. of Ulogie, 36 miles S.E. of Rockhampton. *Min.Ref.* Copper, *see* 1856; Gold, 4310.

Bull Cr. Group of Copper Mines, Cloncurry. Includes Boundary, Talawanta, Cathedral M. Leases, and Decima and Iguana M. Claims. *Min.Ref.* Chrysocolla, *see* 1511; Copper (native), 1984; Copper Pyrites, 2103; Cuprite, 2410; Limonite, 5803, 5804; Malachite, 6160, 6161; Redruthite, 7255.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 161.

Bull's Cr. Opal Mines, 72 miles N.W. of Toompine, near road to Kyabra. Discovered about 1885. *Min.Ref.* Opal (precious), *see* 6941.

GEOLOGICAL NOTE: Desert Sandstone prevails throughout the field. Opal is found in sandstone, the matrix being sandstone boulders occurring irregularly in the sandstone bed. *See* G.S.Q. Pub. No. 177 for details.

—— Mine (2 workings), Mt. Bopple. *Min.Ref.* Coal (anthracite), *see* 1826; Graphite, 4610.

—— Sel. (1357), nr. Gunalda. *Min.Ref.* Coal, *see* 1822.

Bullamon Run Bores. *See under* Artesian Bores. No. 362.

Buller Co. Burke Dist.; *see map,* Pl. 20.

Bullock Cr., nr. Gigoomgan Stn. *Min.Ref.* Azurite, *see* 259; Malachite, 6384; Tile Ore, 2571.

—— ——, rises nr. Warreah (Coalbrook) Rail. Stn., 195 miles S.W. of Townsville, flows S.S.E. into Cornish Cr., 196 miles S.E. of Hughenden. *Min.Ref.* Coal, *see* 1710.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 229.

Bullocky Gully, The Springs, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3338.

Bulloo Co. Warrego Dist.; *see map,* Pl. 18.

—— Bore. *See under* Artesian Bores. No. 413.

Bulwer Co. Darling Downs Dist.; *see map,* Pl. 12.

Bunda Bore. *See under* Artesian Bores. No. 432.

Bunda Bunda Bores. *See under* Artesian Bores. No. 185.

Bundaberg. SITUATION: *See maps,* Pls. 4, 5; 217 miles (by rail) N.byW. of Brisbane. *Co.* Cook; *Dist.* Wide Bay. *Lat.*, 24° 52′ S.; *Long.*, 151° 21′ E.

PORT for the goldfields of Reid's Cr., Gaeta, Stanton-Harcourt, Eidsvold, and St. John's Cr.; the Talkiberan, Beehive, and Yarrol Gold Workings; the mineral fields of Tenningering (Mt. Perry), Boolboonda, Rawbelle, and Rosedale.

HARBOURAGE: There is no bay at the entrance of the Burnett River. Outer Bar has a depth of 9 ft. 6 in. at L.W.S.; Inner Bar, 7 ft. at L.W.S. Tides usually rise 9 ft. at springs. River dredged to a depth of 9 ft. at L.W.S.

POPULATION: 16,718 (census 1911).

RAINFALL: *See under* separate heading.

MINERAL STATISTICS: Wolfram, *see tables,* Pls. 42, 46, 46A. Limestone, *see tables,* Pls. 41, 46, 46A.

MINERAL REFERENCE: Coal, *see* 1791A.

GEOLOGICAL NOTE: Basalt occurs in numerous isolated patches throughout the neighbourhood, resting on sandstones and other rocks belonging to the Burrum (Cretaceous) Coal Measures. Alluvial deposits have formed the banks of the Burnett River, which flows past the town.

See Supplementary Report List, No. 80 (refers. to Coal Measures).

CHAMBER OF COMMERCE: Sec. S. H. Luke.

TECHNICAL COLLEGE: *See* separate heading for list of subjects taught.

GENERAL INFORMATION: Consult *Pugh's Almanac*; *Queensland Post Office Directory*; *Post and Telegraph Guide.*

LOCAL NEWSPAPERS: *Bundaberg Daily Mail, The Daily News.*

Bundalier Bores. *See under* Artesian Bores. No. 413.

Bundamba Coal Measures. *See* G.S.Q. Pub. 150, p. 10 (1899). *See also under* Pine Cr.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 210.

Bundamba, 21 miles (by rail) W.S.W. of Brisbane. *Min.Ref.* Halite, *see* 4658.

—— Bores (including Blackstone). *See under* Coal Bores.

Bundamba Coal Area. *See* Pl. 25. *Included collieries:*—Aberdare, Blackheath, Bogside, Bonnie Dundee, Borehole, Box Flat, Braeside, Denham, Dinmore, Ebbw Vale, Fairbank, Fernie Cr., Mafeking, Newchum, Rhondda, Swanbank, and Whitwood Nos. 2 and 3. *Min.Ref.* Charcoal, *see* 1409; Clay, 1580; Coal, 1729-1736, 1738A, 1738C, 1738D, 1740A-1744A, 1747-1750, 1754, 1757.

GEOLOGICAL NOTE: The Coal Measures at Bundamba belong to the Ipswich Formation of the Trias-Jura System, several fine coal seams being worked extensively. *See* Table of Coal Analyses for character of coal. *See* G.S.Q. Pub. Nos. 147, 204 for details. *See also* Supplementary Report List No. 140.

Bundara Co. Maranoa Dist.; *see map,* Pl. 12.

Bundilla Bore. *See under* Artesian Bores. No. 438.

Bundorin Bore. *See under* Artesian Bores. No. 335.

Bunerba, par. of (14v), Don R. *Min.Ref.* Chalcedony, *see* 1345A; Gold (alluvial), 3273C; Jasper, 5642A; Lydianstone, 5654A; Sapphire, 2353A; Zircon, 8221A.

Bung Bung Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Bungeworgorai Cr., 16 miles N. of Hodgson Rail. Stn. *Min.Ref.* Coal, *see* 1706C, 1706D.

Bungeworgorai Sheep Stn., 6 miles W. of Roma Rail. Stn. *Min.Ref.* Coal, *see* 1706A.

Bunker's Hill, nr. Crow's Nest Rail. Stn. *Min.Ref.* Gold (alluvial), *see* 3366c; Pleonaste, 7591A.

—— Mine, Barmundoo (Tableland Goldfield). *Min.Ref.* Felspar, *see* 2645A; Gold, 4232; Iron Pyrites, 5353.

Bunya Mts., 8 miles N.E. of Bell Rail. Stn. *Min.Ref.* Ilmenite, *see* 4896; Pleonaste, 7587A.

Bunya (par. of) (por. 66), South Pine R. *Min.Ref.* Gold *see* 4221; Manganese-dioxide, 6451.

Burarie Co. Gregory South Dist.; *see map*, Pl. 18.

Burdekin Downs Stn., 15 miles N. of Charters Towers. *Min.Ref.* Limestone, *see* 655, (coralline) 719.

—— Falls, S.W.byW. of Bowen. *Min.Ref.* Azurite, *see* 233A; Malachite, 6331A.

Burdekin River. Rises in the Main Coast Range 25 miles W. of Ingham, flows S. and E. for about 400 miles, and enters the Pacific Ocean 50 miles S.E. of Townsville. *Tribs.* Dry, Clarke, Star, Basalt, Fanning, Sutton, Bowen, and other Rivers. *Min.Ref.* Antimony, *see* 74; Azurite, 215B; Chalcanthite, 1333, 1334; Copper Pyrites, 2242; Coralline Limestone, 719; Gold, 4079, 4085; Limestone, 655; Malachite, 6292, 6293.

—— and Einasleigh Waters (between the). *Min.Ref.* Limestone, *see* 644.

Burenda Co. Warrego Dist.; *see map*, Pl. 18.

—— Run Bores. *See under* Artesian Bores. No. 186.

Burgess & Co. Bore. *See under* Artesian Bores. No. 165.

Burke Co. Burke Dist.; *see map*, Pl. 20.

Burke District includes Wellesley Island. *See maps*, Pls. 20, 21. *Lat.*, 16° to 22°. *Long.*, 138° to 145°.

Situation, etc.: North-west corner of Queensland; bounded on the N. by the Gulf of Carpentaria, on the E. by the districts of Cook, North Kennedy, and Mitchell, on the S. by Gregory North, and on the W. by the Northern Territory of South Australia (*Long.*, 138°). It is drained by the following rivers and their tribs.:—Gregory (tribs. Nicholson and O'Shannassy), Albert, Leichhardt (trib. Alexandra or Landsborough), Flinders (tribs. Cloncurry, Corella, Williams, Fullarton or Marchant, Gilliat, Mackinlay, Woolgar, Stanwell, Dutton, and Saxby), and Norman (tribs. Carron, Yappar, and Clara).

Area: 102,161; with islands included, 102,664.

Principal Mining Centres: Gold and Minerald Fields—Croydon, Stanhills, Burketown, Bower Bird, Cloncurry, Woolgar, Agate Downs, *which see.*

Counties:

Albion Co.

Allison Co.

Cloncurry Mineral Field (in part—Soldier's Cap of Robert's Group Copper Mines. *See also* Argylla, Beaconsfield, Granada, Kamileroi, Selwyn, and Tewinga Counties).

Argylla Co.

Bower Bird Goldfield (in part. *See also* Brahe and Tewinga Counties).

Cloncurry Mineral Field (in part—*see also* Allison County).

Argylla Cr. (Argylla Group) Copper Mines, Cameron River (Euston, Federal, and Mt. Lloyd Groups) Copper Mines. Corella River (Charley's Cr., East Corella, Enquiry, Jubilee, Lady, Lady South, Melba, Mt. Lidster, Pearl, Rosebud, Secret Springs, Sunset, and Wee MacGregor Groups) Copper Mines (*see also* Selwyn Co.). Dugald River (Cabbage-tree, Lady Clayre, Longamundi, and Una Groups) Copper Mines (*see also* Granada Co.). Glenroy (Mt. Remarkable and Hamilton Creek Groups) Copper Mines. Palm-tree Creek (Native Companion Group) Copper Mines. Wills River (Mt. Hope Group) Copper Mines. *See also under* Chatsworth Co., Gregory North District.

Beaconsfield Co.

Cloncurry Mineral Field (in part—*see also* Allison County).

Cloncurry Township (Great Australian Group) Copper Mines, Elder Cr. (Elder Group, Mountain Home Group) Copper Mines (*see also* Duck Cr., Selwyn Co.), Morris Cr. (Rocklands and Serpentine Hill Groups) Copper Mines, Pumpkin Gully (Eagle Hawk, Homeward Bound, Monakoff Groups) Copper Mines.

Burke District—*continued:*

Counties—*continued:*

Brahe Co.

Bower Bird Goldfield (in part—*see also* Argylla Co.).

Buller Co., Burke Co., Canobie Co., Carpentaria Co.

Chudleigh Co.

Woolgar Goldfield (in part—*see also* Woolgar Co.).

Douglas Co., *Hughenden.* Dutton Co., *Coalbrook.* Eddington Co.

Esmeralda Co.

Croydon Goldfield (in part—*see also* Glenora Co., Surrey Co., Woolgar Co.), Stanhills Tinfield.

Fielding Co.

Glenora Co.

Croydon Goldfield (in part—*see also* Esmeralda Co.).

Granada Co.

Cloncurry Mineral Field (in part—*see also* Allison Co.), Dugald R. (Cabbage-tree Cr. Group) Copper Mines, Donaldson (Eclipse Group) Copper Mines.

Gregory Co.

Burketown Mineral Field (Silver, Lead, etc.).

Howitt Co., Iffley Co.

Kamileroi Co.

Cloncurry Mineral Field (in part—*see also* Allison Co.), Mt. Oxide (Mt. Gordon, Mt. Oxide Groups) Copper Mines.

Lamington Co., Landsborough Co., Manfred Co., Morstone Co., Mueller Co., Nash Co., Nicholson Co., Norman Co., Oaklands Co., Parker Co., Porchester Co., Richmond Co., Rochedale Co., Rupert Co. (Richmond), Savannah Co., Saxby Co.

Selwyn Co.

Agate Downs Goldfield.

Cloncurry Mineral Field (in part—*see also* Allison Co.), Corella R. (Lady, Lady South, Melba, Pearl, Springs, Wee MacGregor Groups) Copper Mines (*see also* Argylla Co.). Duck Cr. (Alice, Belfast, Boomerang, Chinaman, Columbiad, Daisy, Diagonal, Elder Groups), Copper Mines (*see also* Beaconsfield Co.). Eva (Pioneer, Ready Rhino, Tambourine, Tharsis, White Oxide Groups) Copper Mines. Florence R. (McPhail Group) Copper Mines. Hampden (Hampden, Monitor Groups) Copper Mines. Malbon R. (Fountain Spring, Just in Time, Lady Maud, Pindorah, Limestone Cr., Mt. Howard Groups) Copper Mines. Martin Cr. (Leviathan, Mt. McCabe Groups) Copper Mines. Slaty Cr. (Hilda, Timberoo Groups) Copper Mines. Soldier's Cap (in part) (Mt. Wheeler Group) Copper Mines.

Stokes Co.

Surrey Co.

Croydon Goldfield (principal part—*see also* Esmeralda Co.).

Talawanta Co., Taldora Co.

Tewinga Co.

Bower Bird Goldfield (in part—*see also* Argylla Co., Brahe Co.).

Cloncurry Mineral Field (in part—*see also* Allison Co.), Coolullah (Bull Cr., Crusader, Dobbyn, St. Paul's, Von Bremen's, Warwick Castle Groups) Copper Mines. Gunpowder Cr. (Big Ben, Calton Hills, and Eastern Cr. Groups) Copper Mines. Leichhardt R. (Jessie's Dream, Mighty Atom, and Mt. Cuthbert Groups) Copper Mines. Mt. Oxide (Mt. Gordon, Mt. Oxide Groups) Copper Mines. Prospector Cr. (Centipede, Mt. Metallic, and Surprise Groups) Copper Mines.

Toorak Co., Undilla Co., Wellesley Co., Wentworth Co., Wondoola Co., Wongalee Co., Wonoma Co.

Woolgar Co.

Croydon Goldfield (in part—*see also* Esmeralda Co.).

Woolgar Goldfield (in part—*see also* Chudleigh Co.).

Yeppar Co.

Mineral Reference and Statistics: *See under* names of Principal Mining Centres.

Burke River Mining Centre, 60 and 70 miles S.W. of Cloncurry. Includes Duchess, Pilgrim, Trikelana, and Mt. Birnie Groups of Copper Mines. *Min.Ref.* Azurite, *see* 207; Chrysocolla, 1524; Copper Pyrites, 2199-2200, 2203; Epsomite, 2614; Iron Pyrites, 5133; Ironstone, 5545; Limonite, 5860-5861, 5864-5869; Malachite, 6255-6258, 6262-6264, 6270-6271; Redruthite, 7285, 7288, 7292-7295; Tetrahedrite, 7769; Tile Ore, 2552.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 249.

Burke's Point Bore. *See under* Artesian Bores. No. 324.

Burketown—

Situation: *See maps,* Pls. 20, 21. On the Albert River, 2,200 miles (by steamer around Cape York) N.W.byW. of Brisbane. *Co.* Porchester; *Dist.* Burke. *Lat.*, 17° 45′ S.; *Long.*, 139° 33′ E.

Port for the Lawn Hills and Lilydale Silver Mines in the Burketown Mineral Field.

Harbourage: The town is about 36 miles up the river from the Gulf of Carpentaria. Depth of water on the Bar varies from 3 ft. to 5 ft. at low water. In the river from Kangaroo Pt. to Truganini landing, depth is 4½ ft. at low water; from thence to Burketown, about 2 ft.

Population: (District), 800.

Geological Note: Recent superficial deposits prevail through this region. They cover artesian water beds belonging to the Cretaceous System.

—— Bore. *See under* Artesian Bores. No. 11.

Burketown Mineral Field—

Situation: *See maps,* Pls. 20, 21. 92 miles S.W. of Burketown. *Co.* Gregory; *Dist.* Burke. *Lat.*, 18° 30′ and 19° S.; *Long.*, 138° 30′ and 139° E.

Proclamation: First and only one, 8th Sept., 1899, as follows:—Commencing at the south-east corner of Bauhinia Vale No. 2 Run, and bounded thence on the north by that run bearing east four miles; on the east by Alice Dale Run bearing south about ninety chains; on the north by that run east and north to the south-west corner of Archie Creek South, by the south-west boundary of same south-easterly to Mahon No. 2; on the east by Mahon No. 2 and Mahon No. 3 south about twelve miles; thence by Lilydale east about one mile; on the south-east by Verdon No. 4 and Verdon No. 1 bearing south-westerly about ten miles; on the south-west by Lilydale bearing north-westerly about two miles; again on the south-east by Lilydale and Verdon bearing south-westerly about seven miles; on the south-west by Verdon West and Bymbell bearing north-westerly about ten miles and a-half; on the east by Murrygon Block and a line bearing north twelve miles and a-half to a point west from the south-west corner of Bauhinia Vale West; on the north by a line and the south boundary of that block bearing east about eleven miles; and again on the east by Bauhinia Vale West bearing north about two miles to the point of commencement.

Area: 202,752 acres (317 square miles).

Leases: Mineral Leases in force and applications, 1910, No. 4; area, 95 acres. Miner's Homestead and applications, 1912, No. 2, area, 50 acres.

Principal Mining Centres: Lawn Hills, Silver-Lead Mines, Mended Hill.

Mineral Statistics: Silver, *see tables,* Pls. 37, 46, 46a. Lead, *see tables,* Pls. 38, 46, 46a. Copper, *see tables,* Pls. 39, 46, 46a.

Mineral References: Lead (Cerussite), 1185a-1186; (Galena), 2692-2697; (Lead Gossan), 5728; Zinc Blende, 8052, 8053; Iron (Hematite), 4676, 4677; Calcite, 451; Halite, 4649.

Geological Note: The rocks of this field are evenly bedded sandstones, shales, and mudstones. They have been broken by enormous faults, along which deposits of quartz and other minerals have been formed. Some of the lodes are large, and contain a very high percentage of lead and silver. *See* G.S.Q. Pubs. Nos. 138 and 232 for details and maps.

Geological Publications: Reports—Nos. 138 (1900) and 232 (1911). *See under* Geo. Sur. Pub. List for title.

Warden: Stationed at Burketown. Inspector of Mines: Stationed at Cloncurry.

Burleigh Run Bores. *See under* Artesian Bores. Nos. 187, 188.

Burncluith Bore No. 1 (near Chinchilla). *Min.Ref.* Coal, *see* 1627. *See also under* Coal Bores.

Burncluith Sub-artesian Bores. *See under* Artesian Bores. No. 88.

Burnett District—

Situation, Etc. : *See maps*, Pls. 4 and 5. *Lat.*, 24° and 27°; *Long.*, 150° and 153°. It is bounded on the N. by Port Curtis, on the E. by Wide Bay, on the S. by Moreton and Darling Downs, and on the W. by Leichhardt Districts, etc. The whole area is drained by the Burnett R. and its tribs., Boyne, Auburn, Rawbelle, Stuart, and Barambah Rs., and Three Moon and Splinter Crs. *See maps*, Pls. 4 and 5.

Area : 12,457 square miles.

Principal Mining Centres : Gold and Mineral Fields—Eidsvold, St. John's Cr., Hungry Hill, Mt. Perry, Nanango, Stanton-Harcourt, Paradise, Mt. Shamrock, Chowey, Mt. Biggenden, Duffer's Rush, Gympie Copper Mines (Gooroomjan Cr.), Tenningering (Mt. Perry), Gaeta, and Reid's Cr., *which see*.

Counties :

Boondooma Co.

Bowen Co., in part. (*See also* Wide Bay District.) Boolboonda Goldfield (Boolboonda, Cambria, and New Moonta Copper and Gold Lodes), Tenningering Gold and Mineral Field (Reid's Cr. Goldfield).

Cook Co., in part (*see also* Wide Bay District). Chowey Goldfield, Dallarnil, Degilbo, Mt. Biggenden (Biggenden Gold and Bismuth Mine), Mt. Hastings (Mt. Hastings Gold Mine), Mt. Havilah (Don Jon and Commonwealth Bismuth, Copper, and Gold Mines), Mt. Shamrock Mineral Field (Mt. Shamrock Gold and Bismuth Mine, and Kent's Knob Gold Mine), Paradise Gold Field, Stanton-Harcourt Gold Field, Woowoonga (Young Australia Gold Mine).

Fitzroy, Co., Kingaroy, Nanango Goldfield, in part—(*See also* Cavendish Co., Moreton District). Scrub Paddock Gold and Copper Diggings (Gympie Copper Mines).

Mackenzie Co., Mt. Hawick (formerly Robina) Copper Mine.

Newcastle Co.

Rawbelle Co. Monal Goldfield, in part—(*See also* Clinton Co., Port Curtis Dist.). Cania and Kroombit Goldfield, in part—(*See also* Pelham Co., Port Curtis Dist.), Rawbelle Mine.

Wicklow Co.

Yarrol Co., partly. Eidsvold Goldfield, Mt. Cannindah Mineral Field, Gaeta Goldfield. (*See also* Port Curtis Dist.).

Mineral References and Statistics : *See under* names of Principal Mining Centres.

—— Range, N.byW. of Mt. Perry. *Min.Ref.* Azurite, *see* 181a; Barytes, 266a; Calcite, 482a; Ironstone, 5515a; Malachite, 6206a; Redruthite, 7276a.

Burnett River, rises in the Burnett Range, 50 miles W. of Bundaberg, flows Sly., then N.E. into Hervey Bay. Length, 230 miles. Tribs. Splinter Cr., Three Moon Cr., Rawbelle R., St. John's Cr., Auburn R., Boyne R., Barambah Cr., etc. *Min.Ref.* Agate, *see* 1368; Galena, 2736; Gold, 3656; Ilmenite, 4889; Limestone, 630; Massicot, 6524; Mispickel, 6665; Molybdenite, 6824; Opal (precious), 6938, (wood) 7002; Sardonyx, 1404; Scheelite, 7356; Silver, 7441-7442.

—— Springs, Burnett District. *Min.Ref.* Coal, *see* 1601.

Burns and Party's Mine, Russell Goldfield. *Min.Ref.* Gold (alluvial), *see* 3227a; Limonite, 5847.

Burnt Hut, Severn R., Stanthorpe. *Min.Ref.* Bismutite, *see* 402a; Cassiterite, 1011, 1011a; Molybdenite, 6851; Molybdite, 6872; Scorodite, 7369a; Wolfram, 7994, 7994a.

Burpengary Bore. *See under* Coal Bores.

—— Cr. (½ mile N. of), (Fountain's Sel.). *Min.Ref.* Coal, *see* 1760a.

Burra Burra Bore. *See under* Artesian Bores. No. 127.

Burranbilla Run Bores. *See under* Artesian Bores. No. 189.

Burrandilla Co. Warrego Dist. ; *see map*, Pl. 18.

—— Lease Bore *See under* Artesian Bores. No. 190.

Burrandowan (par. of), pors. 5v, 11v, Jumma Cr., Jimbour. *Min.Ref.* Coal, *see* 1599; Rutile, 7323B.

—— Stn., 20 miles S.W. of Kingaroy Rail. Stn. *Lat.*, 26° 24′; *Long.*, 151° 18′. *Min.Ref.* Sapphire, *see* 2339.

Burrum Coalfield (*see maps*, Pls. 4, 5, 24), 12 miles (by rail) N.W. of Maryborough (North Coast Line). Centre about *Lat.*, 25° 20′ S.; *Long.*, 152° 40′ E.

Discovery: Coal was found on the Burrum River in 1864 by Messrs. Joss, Miller, and Walsh. Regular output of coal began in 1883 as a result of railway connection with Maryborough.

Collieries: Burrum, Clyde, Dudley, Dundee, Glenesk, Riverbank, Torbanlea, Burgowan (Bellert's).

Mineral Statistics: *Included under* Wide Bay in Pls. 43, 46-46A.

Mineral Reference: Coal, *see* 1805-1815, 1830A; Iron Pyrites, 4995; Opal (common), 6970; Siderite, 7404; Sulphur (native), 7668A.

Geological Note: Coal Measures occur throughout the district, and are made up of sandstones, shales, conglomerates, and seams of coal. The series is known as the Burrum Formation belonging to the Cretaceous System. *See* Coal Analyses (Tables of). *See* G.S.Q. Pub. No. 170 for details. *See also under* Gov. Mining Journal, Reports Nos. 57, 103, 104. *See also* Supplementary Report List No. 143.

—— Bores. *See under* Coal Bores.

—— River rises 25 miles W. of Maryborough, flows N.E. into Hervey Bay 20 miles N. of Maryborough. Length, about 35 miles; tribs., Isis R., Gregory R. *Min.Ref.* Clay Ironstone, *see* 1593.

—— Colliery (Queensland Colliery Co.). *See* Burrum Coalfield. *Min.Ref.* Coal, *see* 1805.

Burslem (Widgegood's) Bore. *See under* Artesian Bores. No. 234.

Burston's (Kahmoo) Bore. *See under* Artesian Bores. No. 237.

Burton's Lease, Grass-tree Goldfield. *Min.Ref.* Gold, *see* 4110.

Busai, Woodlark Is., Brit. New Guinea. *Min.Ref.* Gold, *see* 4559; Iron Pyrites, 5477.

Busby's Gully, Ulam Goldfield. *Min.Ref.* Copper Carbonate, *see* 1957; Galena, 3055; Gold, 4303; Iron Pyrites, 5392-5394.

Bush Springs Sub-artesian Bore. *See under* Artesian Bores. No. 177.

Bushley (Rail. Stn.), 24 miles S.W. of Rockhampton. *Min.Ref.* Coal, *see* 1794; Chalcedony, 1363.

—— Bore, nr. Stanwell. *See under* Coal Bores. *See* Supplementary Report List No. 100.

Bushnell's Advance P.A., Paradise Goldfield. *Min.Ref.* Gold, *see* 3609; Iron Pyrites, 5003.

—— Mines, Limestone Cr., Dee R. *Min.Ref.* Copper carbonate, *see* 1959.

Bustard Head, about 32 miles E.S.E. of Gladstone. Rainfall: *See under* separate heading.

Butcher Bird Reef, Talbot and Machine Crs., Etheridge Goldfield. *Min.Ref.* Galena, *see* 2759; Gold, 3742; Iron Pyrites, 5056.

—— Boy Leader (Golden Gate No. 10 and 11 S., and in Plant's Shaft, G. Gate Mine) Golden Gate Reef, Croydon. *Min.Ref.* Gold, *see* 3510.

Butcher's Cr., head of Mulgrave R., Mulgrave Goldfield *Min.Ref.* Gold, *see* 3778; Iron Pyrites, 5081.

—— Gully, Flinders R. *Min.Ref.* Gold (alluvial), *see* 3189.

Butler and McDonald's Claim, Terraces, Russell Goldfield. *Min.Ref.* Gold (alluvial), *see* 3228.

Buttercup Reef, Eungella Goldfield. *Min.Ref.* Gold, *see* 4097B; Iron Pyrites, 5289A; Wulfenite, 8049A.

Butterfly Gully, Mt. Brown, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1156; Cerussite, 1247; Copper Carbonate, 1930; Fluorspar, 2683; Ironstone, 5557; Mispickel, 6754.

—— M.L. (496), Daisy Group, Cloncurry. *Min.Ref.* Cuprite, *see* 2397; Limonite, 5756; Malachite, 6107; Redruthite, 7216; Tile Ore, 2503.

Byerley Co., Cook Dist. *See map*, Pl. 8.

Byers' Gully, Jones' Cr., Annan Tinfield. *Min.Ref.* Cassiterite, *see* 781, 784, 787, 788; Chlorite, 1429; Mispickel, 6666; Tourmaline, 7841.

Byerwin Stn., 75 miles S.W.byS. of Bowen. *Lat.*, about 21° 4′ S.; *Long.*, about 147° 58′ E. *Min.Ref.* Coal, *see* 1656, 1657.

GEOLOGICAL NOTE: The coal at this place is of good quality, but the seams, so far discovered, are not more than 6 in. thick. Strata are generally horizontal, but disturbed locally by numerous dyke intrusions. *See* G.S.Q. Pub. No. 181 for details. *See also table under* Coal Analyses.

Bylang Bore. *See under* Artesian Bores. No. 192.

Bylong Bore. *See under* Artesian Bores. No. 188.

Bynoe R., trib. of Flinders R., which flows north into the Gulf of Carpentaria. Length about 30 miles. *Min.Ref.* Limestone (cone in cone), *see* 717.

Byrimine Run Bores. *See under* Artesian Bores. No. 191.

Cabbage Tree Cr., br. of Splinter Cr., Dawes Range. *Min.Ref.* Actinolite, *see* 4857; Azurite, 182, 184; Copper (native), 1990; Copper Pyrites, 2141; Cuprite, 2417; Gold (alluvial) 3199, (reef) 3657; Gypsum, 4614; Hematite, 4701; Iron Pyrites, 5021, 5022; Limonite, 5834; Magnetite, 5984; Malachite, 6207-6209; Silver, 7443-7445.

——— ——— ———. Flows E. into Princhester Cr., 45 miles N.W. of Rockhampton. Length about 5 miles. *Min.Ref.* Asbestos, *see* 109; Chrysocolla, 1535; Cuprite, 2476.

——— ——— ——— (1 mile from), trib. of Leichhardt R., Cloncurry. *Min.Ref.* Hematite, *see* 4675.

——— ——— ——— and Banks Cr. (between), Brisbane R. *Min.Ref.* Chromite, *see* 1477.

Cabbage Tree Group of Copper Mines, Cloncurry. *Includes* Cabbage Tree M.F. 3072. *Min.Ref.* Copper Ore, *see* 2016E.

Caboolture, 31 miles (by rail) N. of Brisbane. *Lat.* 27° 3′ S.; *Long.*, 153° 1′ E. *Min.Ref.* Beryl, *see* 296, 297; Coal, 1712; Hematite, 4772; Topaz, 7807.

GEOLOGICAL NOTE: The town is close to the junction of the Burrum Coal Formation (Cretaceous) and the Gympie Formation (Permo-Carboniferous), the former being to the east, the latter to the west. Coal seams are known in the district, but up to the present none have been found of commercial value.

Caboonbah (R.O. and T.O.), 12 miles N.N.E. of Esk. *Min.Ref.* Calcite, *see* 523; Chlorite, 1464; Hematite, 4774.

Cacoxenite. *Compo.*, Phosphate of iron. *Colour*, brownish yellow. *H.*=3·4. *Sp.gr.*=3·3.

439. ———. *Assoc.with* Limonite. *Loc.* on hill in Watt's Sel. (55), nr. Buckley's Shaft, 8 miles S. of Beenleigh, 32 miles (by rail and road) S.E. of Brisbane. *Co.* Ward; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 36, p. 2 (1887).

Cadarga Cr. Rises in Great Dividing Range 50 miles S.W. of Gayndah Rail. Stn., flows W. and N. into Auburn R., 32 miles W.byN. of Gayndah. *Lat.*, 25° 40′—26° 10′ S.; *Long.*, 150° 55′—155° 5′ E. *Min.Ref.* Chlorite, *see* 1428; Coal, 1600; Gold, 3630; Iron Pyrites, 5014; Limonite, 5833; Manganese-dioxide, 6401-6402; Mispickel, 6662; Opal (common), 6971; Turgite, 7889.

——— ——— Gold Mines, 33 miles W.S.W. of Gayndah. *Min.Ref.* Gold, *see* 3630A; Iron Pyrites, 5014A; Limonite, 5833A; Manganese-dioxide, 6402A; Mispickel, 6662A.

Cadell and Sutherland's Reef, Barmundoo Goldfield. *Min.Ref.* Gold, *see* 4233.

Cadmium (Cd). *Atom.Wt.* = 112·4. *Sp.gr.* = 8·65. *Colour*, bluish-white-metallic. Ductile. *See* Cadmium Blende.

USES: Employed with silver in electroplating processes. Some of its compounds are used as pigments and in photography and pyrotechny.

MINERALOGICAL NOTE: Cadmium, as well as occurring in Cadmium Blende at Ravenswood, has also been detected in minute quantities in Zinc Blende in the same locality and at several of the mines on the Burketown Mineral Field. Very little has been done to test the presence of Cadmium in the very numerous zinc deposits of the State.

Cadmium Blende. *Syn.* Greenockite. *Comp.*, Sulphide of Cadmium. *Colour*, usually orange yellow. *Lustre*, adamantine to resinous. Brittle. Nearly transparent. *H.* = 3-3·5. *Sp.gr.* = 4·9. *Contents* (*max.*), Cadmium 77 per cent.

440. ———. *Assoc.with* Zinc-Blende. *Loc.* Ravenswood Goldfield, 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., Vol. 4, p. 50 (1887).

Cadmium Sulphide. *See* Cadmium Blende.

Cahill Bros. Lease (89), Mt. Leswell, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 782; Mispickel, 6671; Tourmaline, 7839.

Cainawarra Bore. *See under* Artesian Bores. No. 254.

Caine's King M.L. (57), Columbiad Group, Cloncurry. *Min.Ref.* Azurite, *see* 161; Chlorite, 1421; Chrysocolla, 1497; Malachite, 6104.

Cairncross's Manganese Workings. *See Min.Ref.* No. 6460A.

Cairngorm. *Var.* of Quartz, *which see.*

Cairns—

SITUATION: *See maps,* Pls. 8, 9, 22. 176 miles N.N.W. of Townsville, 1,072 miles N.W.byN. of Brisbane. *Co.* Nares; *Dist.* Cook. *Lat.*, 16° 55′ S.; *Long.*, 145° 46′ E.

PORT for the Mareeba, Mulgrave, Hodgkinson, Tate, Etheridge, Green Hills, Oaks, and Balcooma Goldfields; the Walsh and Tinaroo (Chillagoe and Herberton) Mineral Fields; the Mts. Spurgeon, Lewis, and Fraser Tin Mines; the Mt. Carbine Wolfram Mines; and the Mt. Molloy Copper Mines.

HARBOURAGE: The Bar is dredged to a depth of 13 ft. at L.W.S. Tides vary from 2 ft. to 10 ft., and the depth of water at wharves varies from 14 ft. to 21 ft. at L.W.S.

POPULATION: 13,556 (Census 1911).

RAINFALL: *See under* separate heading.

GEOLOGICAL NOTE: The town is built on Recent Superficial Deposits derived from the Barron River. The high country immediately to the west is made up principally of altered sedimentaries belonging to the Gympie Formation. By the wearing away of these rocks the famous Barron Falls and Gorge have been formed.

GEOLOGICAL PUBLICATIONS: *See under* Etheridge, Hodgkinson, Mareeba, and Walsh and Tinaroo Mining Centres for Reports, etc., about the district generally. There are none published dealing specially with Cairns.

WARDEN: Stationed at Cairns. INSPECTOR OF MINES: Stationed at Herberton.

CHAMBER OF COMMERCE: Secretary R. T. McManus.

TECHNICAL COLLEGE: Secretary Geo. Thomas. For mining subjects taught, *see under* Technical Colleges.

GENERAL INFORMATION: Consult *Pugh's Almanac, Queensland Post Office Directory, Post and Telegraph Guide, Queensland Government Mining Journal* (Brisbane).

LOCAL NEWSPAPERS: *Argus, Morning Post, Trinity Times.*

Cairns Co. Leichhardt Dist.; *see map,* Pl. 10.

Cairns-Georgetown Road. *Min.Ref.* Hercynite, *see* 4815.

Caithness Bores. *See under* Artesian Bores. No. 193.

Caiwarra Run Bores. *See under* Artesian Bores. No. 192.

Calamine. (*Dana*—Smithsonite.) *Compo.*, Carbonate of Zinc. *Colour,* whitish, often greenish. *Lustre,* vitreous. *Streak,* white. *H.* = 5. *Sp.gr.* = 4-4·5. *Contents* (*max.*), Zinc 52 per cent.

441. ——. *Loc.* Silver Spur Mine, in Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** *Ref.* L.C.B.

442. ——. *Loc.* Rainbow Silver Mine, Dry R., trib. of Walsh R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

443. ——. *Assoc.with* Zinc-Blende. *Loc.* Lancelot Tin Mines, Newellton (Silver Valley), 6 miles E.S.E. of Irvinebank, 9 miles S.W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

444. ——. *Assoc.with* Galena, in quartz lode. *Loc.* Mt. Barker Silver Mine, 3 miles N.W. of Eungella Stn., 33 miles W. of Mirani Rail. Stn. (Mackay Line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Assay:* Lead = 75 per cent.; Silver = 57 oz. per ton; Antimony = trace. *Ref.* G.S.Q. Pub. 54, p. 3 (1887).

445. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Zinc-Blende, Tenorite, and Copperas, in quartz lode. *Loc.* Beer and Dawson's Lease, 1 mile E. of Yorkey's Goldfield, 9 miles N. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 179, p. 8 (1902).

Calaverite. *Compo.*, Telluride of Gold. *Colour*, pale bronze yellow. *Streak*, yellowish gray. *H.* = 2·5. *Sp.gr.* = 9·0. *Contents* (*approx.*), Gold 40 per cent., Silver 3 per cent.

446. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Mt. Morgan Gold Mine (at the 32-ft. level), 24 miles (by rail) S.S.W. of Rockhampton, Mt. Morgan line. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* E.S.S.

Calcareous Sinter. *Var.* of Calcite, *which see.*

Calcareous Tufa. *Var.* of Calcite, *which see.*

Calcifer—

Situation: *See maps*, Pls. 8, 9, 22. 132 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Field. *Co.* Lynd; *Dist.* Cook. *Lat.*, 17° 22′ S.; *Long.*, 144° 38′ E.

Railway Base for Boomerang, Harper, and Hobson Copper Mines, which are connected by tramline.

Population: Included in Chillagoe Returns.

Mineral Statistics: Copper, *see* Herberton Returns, Pls. 39, 46, 51.

Mineral References: Lead (Galena), 2787, (Minium) 6581, (Pyromorphite) 7142; **Copper** (Atacamite) 130, (Azurite) 194, (Chrysocolla) 1517, (Copper Ore) 2027A, (Copper Pyrites) 2168, (Cuprite) 2434, 2435, (Malachite) 6226-6229, (Redruthite) 7279, (Tenorite) 7722, (Tetrahedrite) 7762, (Tile Ore) 2549; Tin (Cassiterite), 922A; Zinc (Smithsonite) 7567, (Zinc-Blende) 8085; Iron (Hematite) 4711, 4712, (Magnetite) 5987-5989, (Mispickel) 6701. Other Minerals: Actinolite, 4859; Diallage, 145, 146; Garnet, 3105; Hornblende, 4828; Lazurite, 5722; Plagioclase, 7070; Tourmaline, 7854.

Geological Note: Silurian limestones form conspicuous lenticular outcrops in the vicinity, and are associated with mica schist, gneiss, and granite. Garnet and several other secondary minerals have been formed where the limestone comes in contact with the granite. Copper in ironstone occurs to the north of Calcifer at Harper's Hill. *See* G.S.Q. Pub. 119 for details and map.

Geological Publications: Reports Nos. 119 (1897), 134 (1898), Maps 220 (1909). *See under* Geol. Sur. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Chillagoe.

Calcino's Sub-artesian Bore. *See under* Artesian Bores. No. 146.

Calcite. *Compo.*, Carbonate of Lime ($CaCO_3$). *H.* = 2·5-3·5. *Sp.gr.* = 2·5-2·7. *Contents* (*max.*), Lime 56 per cent. *Colour*, usually white. *Cleavage*, rhombohedral. *Varieties*, Argentine, Chalk, Dog-tooth Spar, Iceland Spar, Ferro-calcite, Fontainbleau sandstone, Marble, Nail-head Spar, Satin Spar, Stalactite, Stalagmite, Strontiano-calcite, Massive limestone, Travertine, Tufa (Calcareous sinter).

Uses: *See note under* Calcium.

Mineral Note: Commonly occurs in association with ores of Bismuth, Copper, Zinc, Iron, Manganese, Lead, Gold, and Silver; and with Wolfram, Molybdenite, and many other metallic and non-metallic minerals. *See also note under* Limestone.

447. ——. (Crystals) *Assoc.with* Copper (native), Cuprite, and Tenorite. *Loc.* Dugald Mine, Dugald R., 45 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* P.R.S.Q. vol. 4, p. 73 (1887).

448. ——. *Assoc.with* Redruthite, Azurite, Malachite, Ilmenite, Ironstone, Chlorite, and Biotite, in granite, quartz, felspar, and schist. *Loc.* Mavis M.L. (315), Longamundi Group, Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 283, 284 (1908).

449. ——. *Assoc.with* Carbonate of Copper. *Loc.* Contra Lode, ¼ mile S.W. of Great Australian Copper Mine. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

450. ——. *Assoc.with* Hematite and Siderite, in quartz. *Loc.* Uncle Tom Reef, between Pumpkin Gully and Fisher's Cr., 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

451. ——. *Assoc.with* Lead-bearing Gossan and Zinc-Blende, in sandstone. *Loc.* Watson's Mine, Lawn Hills, Burketown Mineral Field, 92 miles S.W. of Burketown. *Co.* Gregory; *Dist.* Burke. *Ref.* G.S.Q. Pub. 138, p. 3 (1900).

452. Calcite. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in gossan and quartz. *Loc.* Iron Duke M.L., Alice Group, 4 miles S.E. of Mt. Start, 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 165, 166 (1908).

453. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Limonite, Actinolite, Chlorite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group, 1½ miles N.N.W. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

454. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Azurite, Iron Pyrites, and Limonite, in schist, slate, and quartz. *Loc.* Eva M.L. (250), Eva Group, 1¼ miles S.E. of Mt. Start, 22½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 152-154 (1908).

455. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, and Chlorite, in chloritic schist, gossan, and quartzite. *Loc.* Eva Extd. M.L. (283), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 155 (1908).

456. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Malachite, Chrysocolla, Iron Pyrites, Limonite, Turgite, and Ferro-Calcite, in quartz, quartzite, and limestone. *Loc.* Florence R. Copper Mines, ½ mile W. of Hampden rd., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 69-78 (1908).

457. ——. *Assoc.with* Limonite and Chlorite, in quartz. *Loc.* Block (25) (M.L. 421), Hampden Group, 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 62 (1908).

457A. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Limonite, and Manganese-dioxide, in limestone, quartz, and schist. *Loc.* Hilda M.L. (242), Hilda Group, Slaty Cr., 20 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 183, 184 (1908).

458. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, in schist and limestone. *Loc.* Mascotte Copper Claim (319), Hilda Group, Slaty Cr. (*ante*). *Ref.* G.S.Q. Pub. vol. 215, pp. 184 and 185 (1908).

459. ——. *Assoc.with* Native Copper, Redruthite, Cuprite, Malachite, Cyanochalcite (?), Limonite, and Ferro-Calcite, in granular limestone. *Loc.* Dandy P.A. (297), McPhail Group, 2 miles S. of Florence R., 33 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 76 and 77 (1908).

459A. ——. *Assoc.with* Gold, Copper (native), Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 219, 227 (1908).

459B. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Tourmaline, in crystallized quartz. *Loc.* Shamrock M.C. (184), Mt. Wheeler Group, Soldier's Cap (*ante*). *Ref.* G.S.Q. Pub. 215, p. 224 (1908).

459C. ——. *Assoc.with* Copper Pyrites, Limonite, and Ferro-calcite, in schist. *Loc.* Ida Copper Mine (179), Timberoo Group, between Slaty Cr. and Mt. Sheafe, 18 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 178, 179 (1908).

460. ——. *Assoc.with* Malachite, Limonite, Ferro-Calcite, and Tourmaline, in cellular gossan and chloritic schist. *Loc.* Marguerite M.C. (151), Timberoo Group, between Slaty Cr. and Mt. Sheafe (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 177 and 178 (1908).

461. ——. *Assoc.with* Copper Pyrites, Redruthite, Bornite, Tile Ore, Malachite, Iron Pyrites, Hematite, Limonite, and Muscovite, in schist, slate, and quartz. Timberoo Copper M. Lease (716), Timberoo Group, Slaty Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 172-175 (1908).

462. ——. *Assoc.with* Gold in quartz. *Loc.* Weatherley's Reef, Weatherley's Cr., Soldier's Cap, 25 miles S.E. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 15 (1885).

463. ——. *Assoc.with* Fluorspar, Siderite, and Serpentine, in granite. Golden Gate Reef, Golden Gate Mining Centre, 4 miles N.W. of Croydon Rail. Stn., 98 miles (by rail and road) S.E. of Normanton, Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 202, p. 10 (1905).

464. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc-Blende. *Loc.* Golden Gate Reef, Golden Gate Mining Centre (*ante*). *Ref.* G.S.Q. Pub. 202, p. 15 (1905).

465. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Argentite, and Fluorspar, in altered granite. *Loc.* Plant's Shaft, G.G. Gold Mines, Golden Gate Mining Centre (*ante*). *Ref.* G.S.Q. Pub. 202, p. 26 (1905).

466. ——. *Assoc.with* Gold and Graphite, in granite. *Loc.* Plant's Shaft, G.G. Nancy Lee Reef, G.G. Gold Mines (*ante*). *Ref.* G.S.Q. Pub. 202, pp. 26-30 (1905).

467. ——. Roger's No. 1 Mine, G.G. Reef, Golden Gate Mining Centre, 4 miles N.W. of Croydon. *Co.* Surrey; *Dist.* Burke. *Ref.* B.D.

468. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Limonite, and Ferro-calcite, in quartz. *Loc.* Glenferrie P.A. (300), Dobbyn Group, nr. Old Man Cr., Coolullah, 70½ miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 344 (1908).

469. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Jasper, in slate, gossan, and quartz. *Loc.* Queenslander M.L. (436), Mt. Metallic Group, Prospector Cr., Leichhardt R., 52 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 297-299 (1908).

470. ——. *Assoc.with* Copper Pyrites, Redruthite, and Limonite, in schist and quartz. *Loc.* Hare's Excelsior M.L. (?), Von Bremen's Group, St. Paul's Cr., Leichhardt R., 70 miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 327 and 328 (1908).

471. ——. In altered sedimentary rocks, 1½ miles S. of Moolboolaman Rail. Stn. (Mt. Perry line), 42½ miles (by rail and road) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* L.C.B.

472. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Cuprite, Tile Ore, Chalcotrichite, and Zinc-Blende, in quartz lode. *Loc.* Mt. Perry Copper Mine, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.M.

473. ——. *Loc.* Sandy Cr., Mt. Perry (*ante*). *Ref.* G.S.Q. Pub. 21, p. 10 (1885).

474. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Magnetite, Mispickel, Native Bismuth, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Erythrine, Viridite, Actinolite, Chalcedony, and Epidote, in slate and hornblende rock. *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden, 58 miles (by rail and road) W. of Maryborough (Gayndah Rail. line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 60 (1890), 173 (1902), and 194, p. 48 (1904), and G.S.M.

475. ——. *Assoc.with* Aragonite. *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden (*ante*). *Ref.* G.S.Q. Pub. 60, p. 2 (1890).

476. ——. *Assoc.with* Copper Pyrites, Mispickel, and Bismutite, in lode. *Loc.* 1 mile N.N.E. of Mt. Biggenden, 5 miles W. of Biggenden Rail. Stn. (Gayndah line), 59 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. 3 (1890).

477. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Pyrrhotite, Copper Pyrites, Cuprite, Tenorite, Malachite, Bismuthinite, Hematite, and Zinc-Blende, in lode. *Loc.* Commonwealth Copper-Bismuth Mine, Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), and 207, pp. 14-19 (1907).

478. ——. *Assoc.with* Garnet *var.* Andradite and *sub.var.* Colophonite. *Loc.* Don Jon (Unique) Mine, Mt. Havilah (*ante*). *Ref.* G.S.M.

479. ——. *Assoc.with* Hematite, Bismuth (native), Bismuthinite, and Limestone. *Loc.* Don Jon (Unique) Mine, Mt. Havilah (*ante*). *Ref.* B.D.

479A.——. *Assoc.with* Garnet and Epidote. *Loc.* Mt. Havilah Mine, Mt. Havilah (*ante*). *Ref.* B.D.

480. ——. *Assoc.with* Gold, Telluride of Gold, Native Bismuth, Bismuthinite, Molybdenite, Mispickel, Joseite, Zinc-Blende, Copper Pyrites, Malachite, in quartz. *Loc.* Mt. Shamrock Mine, 5½ miles W.N.W. of Degilbo (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett.

481. ——. *Assoc.with* Gold, in quartz. *Loc.* Black Watch Reef, Scrub Paddock Diggings, 23 miles N.N.E. of Nanango. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 29, p. 3 (1886).

482. ——. in quartz. *Loc.* Mt. Hawick (formerly Robina) Copper Mine, 12 miles by road) W.S.W. of Degilbo (Gayndah Rail. line). *Co.* Mackenzie; *Dist.* Burnett. *Ref.* L.C.B.

482A.——. *Assoc.with* Redruthite, Malachite, Azurite, Ironstone, and Barytes. *Loc.* Burnett Range, nr. Gaeta, about 25 miles N.byW. of Mt. Perry Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* A.R., p. 263 (1910).

483. ——. *Assoc.with* Gold, Copper Carbonate, and Galena. *Loc.* Black Ball Lease, Hodgkinson Goldfield, 19 miles (by coach) from Dimbullah (Chillagoe line). *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 16, p. 6 (1884).

484. Calcite. *Assoc.with* Andradite Garnet, and Fluorspar. *Loc.* Dorothy Mins, 1½ Muldiva, 6 miles S.W.byS. of Almaden, Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 35 (1897).

484A. ——. *Assoc.with* Andradite Garnet, and Fluorspar. *Loc.* Dorothy Mine, 1½ miles S.E. of Mungana Rail. Stn. (Chillagoe Rail. Line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

485. ——. In limestone deposits. *Loc.* Mungana (on Chillagoe line), 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q. vol. 15, p. 64 (1900).

486. ——. *Assoc.with* Gold, Iron Pyrites, Fluorspar, and Pinite. *Loc.* Daisy Mine, Coen Goldfield, 45 miles by road N.N.W. of Port Stewart, 189 miles N.W. of Cooktown. *Co.* Sidmouth; *Dist.* Cook. *Ref.* G.S.M.

487. ——. *Assoc.with* Turgite. *Loc.* Por. 4064, Pittsworth, 137 miles (by rail) S.W.byS. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* L.C.B.

488. ——. *Assoc.with* Garnet and Copper Pyrites. *Loc.* Malone's Mine, S. of Pikedale Hotel, 11 miles W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs.

489. ——. In shaft. *Loc.* Pikedale Silver Mine, Woolshed Gully, near Pikedale Head Stn.; 20 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 88 (1898).

490. ——. *Assoc.with* Copper Pyrites, Mispickel, Cassiterite, Wolfram, Zinc-Blende, Chlorite, and Orthoclase. *Loc.* Sundown Copper Mine, 12 miles S.W.byW. of Ballandean, 26 miles (by rail and road) S.W. of Stanthorpe. *Ref.* G.S.Q. Pub. 191, p. 22 (1904), G.S.M. and B.D. Assay: *See* No. 2192.

491. ——. *Assoc.with* Gold, Pyrargyrite, Iron Pyrites, Copper Pyrites, Cuprite, Tile Ore, Azurite, Malachite, Galena, Cerussite, Zinc Blende, Ironstone, and Smithsonite. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120 (1898), p. 191 (1904).

492. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Limonite, and Epsomite, in quartz lode in schist and quartzite. *Loc.* Duchess M.L. 275, Duchess Group, Jack's Cr., trib. Burke R., 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 18-23 (1908).

493. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Atacamite, and Limonite, in quartz and chloritic schist. *Loc.* Blue Jacket M.L. (632), Mt. Hope Group, 53½ miles S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 43, 44 (1908).

494. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Limonite, Iron Pyrites, and Covellite (?), in chloritic schist. *Loc.* Monarch Senior M.C. (352), Mt. Hope Group, 56 miles S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 42 and 43 (1908).

495. ——. *Assoc.with* Gold, Cuprite, Tile Ore, Tenorite, Malachite, Atacamite, Chalcanthite, Limonite, Iron Pyrites, and Chalcedony, in kaolinised slate and gossan. *Loc.* Mt. Elliott Copper Mines, Mt. Elliott Group, Maggies Cr., 58 miles S. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 2-14 (1903).

496. ——. Newellton (Silver Valley), 10 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills, Chillagoe br. line, Walsh and Tinaroo Mineral Field. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* Q.M.

496A. ——. *Assoc.with* Scolecite, in granite. *Loc.* Mary Mine, Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 110 (1887).

497. ——. *Assoc.with* Scolecite, in granite. *Loc.* Mexican Claim, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 110 (1887).

498. ——. *Assoc.with* Gold, Iron Pyrites, Gypsum, Chalcedony, in quartz. *Loc.* North Australian Reef, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q. vol. 4, p. 36 (1887).

499. ——. *Assoc.with* Scolecite, in granite. *Loc.* Queen Block Extended Mine, Charters Towers Goldfield (*ante*) *Ref.* P.R.S.Q., vol. 4, p. 109 (1887).

500. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Zinc-Blende, Gypsum, and Chlorite, in quartz. *Loc.* Queen Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 26 (1879), P.R.S.Q., vol. 4, pp. 36, 47 (1887), G.S.M., and W.C.T.

501. ——. *Assoc.with* Iron Pyrites, Malachite, Magnetite, Ironstone, Graphite, and Garnet. *Loc.* Double-barrel Cr. (Manton), on Northern line, 27 miles S. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* L.B. 2, p. 720 (1891).

502. ——. In beach sand-rock. *Loc.* Magnetic Is., Cleveland Bay, 5½ miles N. of Townsville. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 75, p. 2 (1892).

503. ——. *Assoc.with* Zinc Blende. *Loc.* Black Jack Mine, Ravenswood, 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

504. ——. *Assoc.with* Gold and Silver, with traces of Copper and Lead. *Loc.* Upper Cape Diggings, 17 miles W.byN. of Cape River Rail. line, 77 miles (by rail and road) W.S.W. of Charters Towers. *Co.* Griffiths; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 38 (1887).

505. ——. *Assoc.with* Chrysocolla, Pyrolusite, Cerussite, and Galena, in garnet rock. *Loc.* Mt. Moss South Lease (168), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Assay:* Silver = 16 oz. 6 dwt. 16 gr. per ton; Lead = 69·8 per cent.; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

506. ——. *Assoc.with* Garnet, Chlorite, and Copper Carbonate, in lode. *Loc.* Running R. North Lease (164), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

507. ——. *Assoc.with* Azurite and Malachite. *Loc.* Emu Plains Silver Field, E. of Bowen R., 50 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 54, p. 4 (1889).

508. ——. *Assoc.with* Laumonite, Chalcedony, and Agate, in basic volcanic rock. *Loc.* Near Mt. McGregor, 2½ miles S.E. of Mt. Toby, 2½ miles S.E. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 164, p. 15 (1901).

509. ——. *Assoc.with* Copper carbonate. *Loc.* McDougall's Head Stn. (Biralee), Bowen R., 50 miles S.W. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

510. ——. In dolerite, Rosella Cr., Bowen R., 60 miles W.S.W. of Bowen. *Co.* Drake (*ante*). *Ref.* G.S.Q. Pub. 4, p. 29 (1879).

511. ——. In vein, ¼ mile W. of Three-mile Yards, between Two-mile Cr. and Sellheim R., 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

511A. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Tile Ore, Malachite, Azurite, and Chlorite, in slate and granite. *Loc.* MacFadzen's M.F. (1749), Douchang, Flora, Essie, Dozzler, and Green Outcrops lodes, Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 228, pp. 31-35 (1910).

512. ——. *Assoc.with* Gold, in quartz. *Loc.* Hidden Treasure Mine, Yatton Goldfield, 21 miles S.W.byW. of St. Laurence. *Co.* Killarney (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

513. ——. *Assoc.with* Gold and Siderite, in quartz. *Loc.* Mountain Maid Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

514. ——. *Assoc.with* Gold, Copper Pyrites, Chalcanthite, and Orthoclase, in quartz. *Loc.* Red Streak Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 7 (1887).

515. ——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* Southern Cross Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

516. ——. *Assoc.with* Gold, Iron Pyrites, Siderite, Steatite, and Felspar, in quartz. *Loc.* St. Catherine Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

517. ——. In tuff and sandstone. *Loc.* Balcomba Range, nr. Balcomba Stn., 24 miles N. of Duaringa Rail. Stn. (Central line), 90 miles (by rail and road) W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* B.D.

518. ——. *Assoc.with* Gold, in quartz. *Loc.* Erratic Star Reef, Nuggety Gully, Mt. Britton Goldfield, 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

519. ——. *Assoc.with* Gold, Iron Pyrites, in quartz. *Loc.* Keeley and Valentine's Claim, Nuggety Gully (*ante*). *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

520. ——. *Assoc.with* Gold, in quartz. *Loc.* Little Wanderer Reef, Nuggety Gully (*ante*). *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

521. ——. *Assoc.with* Gold, in quartz. *Loc.* Union Reef, Nuggety Gully (*ante*). *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

522. ——. *Assoc.with* Limonite. *Loc.* Main Range, Maranoa Range. *Dist.* **Maranoa.** *Ref.* P.R.S.Q., vol. 4, p. 61 (1887).

523. ——. *Assoc.with* Chlorite and Hematite. *Loc.* Caboonbah, 12 miles N.N.E. of Esk Rail. Stn. (Brisbane-Valley line), 55 miles (by rail and road) N.N.E. of Ipswich. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.M.

524. Calcite. *Assoc.with* Gold, Iron Pyrites, Massicot, Cassiterite, Cerussite, and Bismuth, in kaolinised greisen. *Loc.* Snowdrop P.A., Mt. Langan, Emu Cr., 14½ miles W.N.W. of Kannungar Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Ref.* Q.G.M. Journal, vol. 7, p. 467 (1906).

525. ——. *Assoc.with* Turgite. *Loc.* Por. 1, Dugandan, 59 miles (by rail) S. of Ipswich. *Co.* Churchill; *Dist.* Moreton. *Ref.* G.S.M.

525A.——. *Assoc.with* Magnesite, Chabazite, and Natrolite. *Loc.* Forest Gate Farm (pors. 27 and 81v), Mt. Davidson, 5 miles E.S.E. of Toowoomba. *Co.* Churchill (*ante*). *Ref.* G.S.M. and Q.G.M. Journal, vol. 12, p. 174 (1911).

526. ——. In serpentinous schist. *Loc.* Kelly's Gold Mine, Calliope Goldfield, 12 miles S.S.W. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* L.C.B.

527. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Connemarra Reef, Pancake Gully, Calliope Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 4 (1885).

527A.——. *Assoc.with* Gold, in casing of calcareous clay. *Loc.* Alexander Reef, Boyne Range, 5 miles S.E. of Calliope, 17 miles S.E. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 5 (1885).

527B.——. *Assoc.with* Gold, in quartz. *Loc.* Mitchell Reef, above New Zealand Gully, 5 miles S.E. of Calliope (*ante*). *Ref.* G.S.Q. Pub. 21, p. 5 (1885).

528. ——. *Assoc.with* Copper Pyrites, Bornite, Tenorite, Malachite, Azurite, Galena, Zinc-Blende, Hematite, Magnetite, Garnet, and Chlorite. *Loc.* Glassford Cr. Copper Mines, Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne Valley br. line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 150, p. 5 (1900), and 194, p. 28 (1904).

529. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Tile Ore, Azurite, Malachite, Iron Pyrites, Hematite, Limonite, and Magnetite. *Loc.* Many Peaks Copper Mine, Deception Cr., 2 miles W. of Nevertire, 58 miles (by rail) due S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 150, pp. 7 and 8 (1900), and 194, p. 28 (1904).

530. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Mispickel, Galena, and Zinc-Blende, in quartz. *Loc.* Advance Reef, Norton Goldfield, 32½ miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 6 (1885), 208, p. 11 (1907), and G.S.M.

531. ——. *Assoc.with* Gold. *Loc.* Calcite Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 17 (1907).

532. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc-Blende. *Loc.* Frampton United Mines, Norton Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

533. ——. *Assoc.with* Gold, Zinc-Blende, Galena, and Iron Pyrites, in quartz. *Loc.* Hickey's Reef, Norton Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

534. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Galena, Mispickel, and Zinc-Blende, in quartz. *Loc.* Who'd-ha'-thought-it Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 6 (1885), and 208, p. 39 (1907).

535. ——. *Assoc.with* Gold, Copper Carbonate, Garnet, and Quartz Crystals. *Loc.* Mt. Grim, 3½ miles W.S.W. of Mt. Alma Stn., 30 miles W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 24 (1904).

535A.——. *Assoc.with* Gold, Iron Pyrites, and Tourmaline. *Loc.* Union Gold Mine, Cawarral Goldfield, 23 miles (by rail) N.N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 67 (1887).

536. ——. *Assoc.with* Natrolite and Analcime. *Loc.* Morinish Goldfield, 25 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*).

537. ——. *See* 527A.

538. ——. *See* 527B.

539. ——. Malchi Cr., trib. of Neerkol Cr., about 9 miles W.S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898). *See* Table of Analyses *under* Limestone.

540. —— (crystalline). *Loc.* Mt. Hay, 1½ miles S. of Wycarbah (Central Rail. line), 25½ miles (by rail and road) S.W.byS. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

541. ——. In limestone belt. *Loc.* Stewart's Cr., trib. of Neerkol Cr., 1 to 3 miles W.N.W. of Stanwell Rail. Stn. (Central line), 16 to 20 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

542. ——. *Assoc.with* Limonite. *Loc.* Stoney Cr., trib. of Neerkoll Cr., Stanwell, 16 miles (by rail) S.W.byW. of Rockhampton (*ante*). *Ref.* B.D.

543. ——, with included Natrolite. Stanwell (*ante*). *Ref.* B.D.

544. ——. In sandstone. *Loc.* Stockyard Cr., Styx R., 12 miles S.E. of St. Lawrence, 52 miles N.W.byN. of Rockhampton. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 84, p. 2 (1892).

545. ——. *Assoc.with* Gold and Chlorite. *Loc.* Rosewood Goldfield, 32 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 73 (1887), and G.S.M.

546. ——. In shales. *Loc.* Dundee Road, nr. Westwood, 31 miles (by rail) S.W. of Rockhampton. *Co.* Pakington (*ante*). *Ref.* B.D.

547. ——. *Assoc.with* Gold, Copper Pyrites, and Molybdenite, in quartz. *Loc.* Mt. Rose Reef, Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.M.

547A. ——. *Assoc.with* Copper Pyrites and Epidote, in quartz lode. *Loc.* 1½ miles S. of Dee Alluvial Gold Mines, 6 miles N.E. of Mt. Morgan Rail. Stn. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* B.D.

548. ——. *Assoc.with* Gold, Iron Pyrites, and Limonite, in euritic granite. *Loc.* Hidden Treasure Mine, Mundic Cr., Mt. Morgan (Crocodile Cr.) Goldfield, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 132, p. 11 (1898), and 161, pp. 9-12 (1901).

549. ——. *Assoc.with* Gold, Iron Pyrites, and Tourmaline. *Loc.* Union G.M. Co.'s Lease, Mt. Morgan (Crocodile) Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 40 (1887).

550. ——. *Assoc.with* Ankerite, in quartz. *Loc.* No. 7 Tunnel, Moonmera Copper Mines, 20 miles (by rail) S.S.W. of Rockhampton (Mt. Morgan line). *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 195, p. 22 (1904).

551. ——. *Assoc.with* Cinnabar, in lode. *Loc.* King Bombi Cr., Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 28, p. 8 (1886).

552. ——. *Assoc.with* Gold, in porphyry. *Loc.* Long Tunnel 2 North Mine, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1886).

553. ——. *Assoc.with* Cinnabar, in quartz. *Loc.* 1 mile E. of Messenger's Sel., Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 8 (1886).

554. ——. *Assoc.with* Gold, in mullocky reef. *Loc.* Perseverance Reef, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 3 (1886).

555. ——. *Assoc.with* Gold. *Loc.* Three Bells Claim, Running Cr., Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

556. ——. *Assoc.with* Cinnabar. *Loc.* Wolf Lode, Wide Bay Cr., Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 8 (1886).

557. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and Graphite, in diorite. *Loc.* Campbell's Reef, Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 179, p. 8 (1902), and G.S.M.

558. ——. *Assoc.with* Gold and Magnesite, in quartz reef. *Loc.* Waratah Lease, Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 7 (1902).

559. ——. As veins, in slate, shale, and other sedimentary rocks. *Loc.* In most of the reefs on the Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Cos.* Lennox and March; *Dist.* Wide Bay.

560. ——. *Assoc.with* Copper Pyrites, Tetrahedrite, Azurite, Malachite, Galena, Zinc-Blende, and Iron Pyrites, in slate, diorite, andesite, etc. *Loc.* Blue Bell Copper Mine, Amamoor Cr., 19 miles S.S.E. from Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* Q.G.M. Journal, vol. 8, pp. 524-526 (1907).

561. ——. *Assoc.with* Celestine. *Loc.* Kawataria [Kiriwinia], 272 miles E.byN. of Port Moresby, **Brit. New Guinea.**

562. ——. *Assoc.with* Quartz, in dolorite dykes. *Loc.* Kimuta Island (Renard Group), 409 miles E.byS. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 26 (1892).

563. ——. **Argentine** (*var.*). *Assoc.with* Iron Pyrites, in quartz vein traversing granite. *Loc.* Highland Mary Block Shaft, 1 mile S.E. of Croydon Rail. Stn. (Normanton line), Croydon Goldfield, 94 miles (by rail) S.E. of Normanton. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

564. —— ——. *Assoc.with* Gold, Iron Pyrites, Galena, Fluorspar, and Calcite, in quartz and altered syenitic granite. *Loc.* Plant's Shaft, Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 202, p. 26 (1905).

565. —— ——. In quartz reef. *Loc.* Roger's No. 1 Mine, Golden Gate Reef (*ante*). *Ref.* B.D.

566. ——. **(Black.)** In nodules, in coal measure shales. *Loc.* Mt. Wiseman, nr. Banana, 85 miles S.S.W. of Rockhampton. *Co.* Ferguson; *Dist.* Leichhardt. *Ref.* B.D.

567. Calcite. **(Chalk)** (foraminiferal), as irregular bands in masses alternating with gypsum, limestone, and sandstone. *Loc.* Cattle Creek Block, Eva No. 2, trib. of Vergemont R., about 100 miles S. of Winton, and 10 miles E. of Rosebrook Stn. *Co.* Vergemont; *Dist.* Mitchell. *Ref.* B.D.

568. ——. **(Dog-tooth Spar.)** *Loc.* Chillagoe Caves, Calcifer, 133 miles (by rail) W.S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 59 (1900).

569. —— ——. *Assoc.with* Ferro-Calcite, Natrolite, and Phacolite, in volcanic tuff. *Loc.* between Harlaxton and Spring Bluff, 5 miles (by rail) N. of Toowoomba. *Co.* Aubigny; *Dist.* Darling Downs. *Ref.* B.D.

570. —— ——. In basic volcanic tuff. *Loc.* Spring Bluff, 10 miles (by rail) N. of Toowoomba, 91 miles (by rail) W. of Brisbane. *Co.* Churchill; *Dist.* Moreton. *Ref.* B.D.

571. —— ——. *Loc.* Mt. Wilson (Wilson's Peak), 20 miles S.W. of Boonah Rail. Stn. (Fassifern line), 79 miles (by rail and road) S. of Ipswich. *Co.* Ward; *Dist.* Moreton.

572. ——. **(Ferro-Calcite.)** *Assoc.with* Native Copper, Redruthite, Cuprite, Malachite, Cyanochalcite, Limonite, and Calcite, in granular limestone. *Loc.* Dandy P.A. (297), McPhail Group, 2 miles S. of Florence R., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 76 and 77 (1908).

573. —— ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Malachite, Chrysocolla, Iron Pyrites, Limonite, Turgite, and Calcite, in quartz, quartzite, and limestone. *Loc.* Florence River Copper Lease, ½ mile W. of Hampden Rd., 33 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 69-78 (1908).

573A. —— ——. *Assoc.with* Copper Pyrites, Limonite, and Calcite. *Loc.* Ida Copper M.C. (179), Slaty Cr., Timberoo Group, 18 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub 215, pp. 178-179 (1908).

574. —— ——. *Assoc.with* Malachite, Limonite, Calcite, Tourmaline, in cellular gossan and chloritic schist. *Loc.* Marguerite M.C. (151), Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 177 and 178 (1908).

575. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Limonite, and Calcite. *Loc.* Glenferrie P.A. (300), nr. Old Man Cr., Dobbyn Group, Coolullah, 70½ miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 344 (1908).

576. —— ——. *Assoc.with* Calcite, Phacolite, and Natrolite, in basic volcanic tuff, in railway cuttings. *Loc.* between Harlaxton and Spring Bluff Rail. Stns., 5 miles N. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* B.D.

577. —— ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Galena. *Loc.* Louisa Mine, 3 miles W. of Pratten, Talgai Goldfield, 51 miles (by rail) S. of Toowoomba. *Co.* Merivale; *Dist.* Darling Dwns. *Ref.* G.S.Q. Pubs. 120, p. 55 (1898), 159 p. 1 (1900), and 186, pp. 17, 18 (1903), and G.S.M.

578. —— ——. *Assoc.with* Epidote and Malachite. *Loc.* *Collaroy Stn.*, 25 miles N.W. of St. Lawrence. *Co.* Killarney; *Dist.* **Leichhardt.** *Ref.* G.S.M.

579. ——. **(Fontainbleau Sandstone.)** *Loc.* Pascoe's Coal Mine, S. of *Bluff* Rail. Stn., 107 miles (by rail) W.byS. of Rockhampton. *Co.* Humboldt; *Dist.* Leichhardt. *Ref.* B.D.

580. —— ——. *Loc.* below basalt at Amby Creek, Falls of Timburn, nr. Kilmorey Stn., 55 miles N.W .of Roma. *Co.* Bundara; *Dist.* Maranoa.

581. ——. **(Iceland Spar.)** *Loc.* Biggenden Mine, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.M.

582. ——. **(Marble.)** *Loc.* opposite Mt. Emma, 3 miles N.E. of Palmerville, 85 miles S.W.byW. of Cooktown. *Co.* Chelmsford; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 35, p. 12 (1887).

583. —— —— (white, fine quality). Localities near Chillagoe, 139 miles (by rail) W.S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 77, p. 4 (1891) and L.B. 2, p. 648 (1891).

584. —— ——. *Loc.* Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 74 (1887).

585. —— —— (white, saccharoidal). *Loc.* Mountain, nr. Double-barrel Cr. (Manton), 27 miles (by rail) S. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 2, p. 3 (1879).

586. —— —— (grey and of fine quality). *Loc.* Northern Railway, 30 miles S. of Townsville (*ante*). *Ref.* L.B. 2, p. 648 (1891).

587. —— —— (white, saccharoidal). *Loc.* On hill, W. of Reid Cr. Rail. Stn., N. of Torrent Cr., 30 miles S. of Townsville (*ante*). *Ref.* G.S.Q. Pub. 2, p. 35 (1879).

588. —— —— (white). *Loc.* Mt. Roundback, 35 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* L.B. 2, p. 648 (1891).

589. —— —— (white, saccharoidal). *Loc.* Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 1 (1892).

590. —— ——. *Loc.* Glenmore, 16 miles N.W.byN. of Clermont. *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.M.

591. —— ——. *Loc.* Calliope R., 1 mile below Carrara Stn., 12 miles S.W. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 21, p. 3 (1885), and 194, p. 21 (1904).

592. —— ——. *Loc.* Ferguson's Crossing, Calliope R., nr. Catfish, 21 miles S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 34 (1904).

593. —— —— (grey, white). *Loc.* Marblestone, Raggote Cr., trib. of Fuller's Cr., Boyne R., 20 miles S. of Gladstone (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1885), and 194, p. 33 (1904). Very beautiful brecciated marble occurs in this locality which is well adapted for ornamental work. The colour of the stone is grey, white, and red.

594. —— ——. *Loc.* Mt. Grim, 31 miles W.S.W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 34 (1904).

595. —— —— (blue and white). *Loc.* Jones's Quarry, nr. Rosedale Rail. Stn., 34 miles (by rail) N.W. of Bundaberg. *Co.* Flinders; *Dist.* Port Curtis. *Analysis:* Carbonate of Lime = 97 per cent. *Ref.* A.R. 1906, p. 59.

596. —— —— (white). *Loc.* nr. McRitchie's Wolfram Claim, nr. Rosedale Rail. Stn. (*ante*). *Ref.* B.D.

597. —— —— (white, rose). *Loc.* Hunter Island, Duke Group, 45 miles N.E.byE. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 19 and 21 (1904), L.B. 2, p. 648 (1891), and G.S.M.

598. —— —— (pink, green). *Loc.* Verde Antique Point, Hunter Is. (Duke Group) (*ante*). *Ref.* G.S.Q. Pub. 194, p. 21 (1904).

599. —— —— (white, saccharoidal). *Loc.* Iron Is., Duke Group, 40 miles N.E. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 10 (1904), and G.S.M.

600. —— ——. *Loc.* Marble Is., Duke Group, 45 miles N.E.byE. of St. Lawrence (*ante*). *Ref.* G.S.Q. Pub. 194, p. 20 (1904).

601. —— —— (white, grey). *Loc.* Moreton Is., Duke Group (*ante*). *Ref.* G.S.Q. Pub. 194, p. 19 (1904), and G.S.M.

602. —— ——. Gigoomgan Head Stn., 35 miles W.S.W. of Maryborough. *Co.* Lennox. *Ref.* G.S.Q. Pub. 194, p. 52 (1904). *Dist.* **Wide Bay.**

603. —— ——. *Loc.* Taupota, 224 miles E.byS. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 55, p. 1 (1889).

604. ——. **(Nail-head Spar.)** *Loc.* Roger's No. 1 Mine, Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

605. ——. **(Purple.)** *Assoc.with* Gold, Iron Pyrites, and Magnetite, in quartz reef. *Loc.* Mt. Hastings Mine, 2 miles S.E. of Mt. Biggenden, 5 miles S.byW. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 60, p. 4 (1890), and G.S.M.

606. ——. **(Satin Spar.)** *Loc.* in Chillagoe Caves, Calcifer, 133 miles (by rail) W.S.W. of Cairns, Cairns-Chillagoe Rail. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 65 (1900).

607. ——. **(Stalactite.)** In Chillagoe Caves (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 65 (1900), and G.S.M.

608. —— ——. *Loc.* Glenlyon, 30 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* P.R.S.Q., vol. 4, p. 73 (1887).

609. —— ——. In caves, Fanning Stn., 59 miles S.byW. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.M.

610. —— ——. *Loc.* Caves, nr. Gulewa Cr., St. Aignan (Misima) Is., 379 miles E.byS. of Port Moresby, Brit. New Guinea. *Ref.* G.S.M.

611. —— ——, in limestone caves. *Loc.* South Coast of Vakuta Is., Trobriand Group, 278 miles E.byN. of Port Moresby, Brit. New Guinea. *Ref.* G.S.M.

612. ——. **(Stalagmite.)** *Loc.* In Chillagoe Caves, Calcifer, 133 miles (by rail) W.S.W. of Cairns (Cairns-Chillagoe Rail). *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 65 (1900).

613. Calcite **(Strontiano-calcite).** *Loc.* Edward's Sel., Mt. Toby, 4½ miles N. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 164, p. 16 (1901).

614. —— ——. *Loc.* nr. Gatton, 61 miles (by rail) W. of Brisbane. *Co.* Churchill; *Dist.* Moreton. *Ref.* G.M.

615. ——. **(Limestone.)** Dugald River, 45 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 3 (1885).

616. —— ——. Mt. Eurie, nr. head of Dugald R., 40 miles N.byW. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 10, p. 7 (1885).

617. —— ——. *Loc.* Sunday Gully, 3 miles N. of Leichhardt R., 95 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 1 (1895).

618. —— ——. Fisher's Cr., trib. of Canal Cr., 8 miles E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 2 (1885).

619. —— ——. Between Devoncourt Stn. and Malvern Cr., 35 to 40 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 6 (1895).

620. —— ——. Spring Cr., 40 miles S.S.W. of Cloncurry (*ante*). *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 6 (1895).

621. —— ——. *Loc.* Gunpowder Cr., 87 miles N.W.byW. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 12 (1885).

622. —— ——. *Assoc.with* Hematite, in sedimentary rocks. *Loc.* 5 miles up Percy R., br. of Gilbert R., near Gilberton, 60 miles S. of Georgetown. *Co.* Victor; *Dist.* Burke. *Ref.* G.S.Q. Pub. 151, p. 2 (1900).

623. —— ——. *Assoc.with* Ironstone. *Loc.* Flinders R., 18 miles N.W. of Warreah (Coalbrook) Rail Stn. (Hughenden line). *Co.* Wongalee; *Dist.* Burke. *Ref.* G.S.Q. Pub. 44, p. 1 (1888).

624. —— ——. In belt running S. from Biggenden to Degilbo, crossing rail. line 2 miles N.W. of Biggenden Rail. Stn. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 194, p. 52 (1904). Selections here contain limestone, and quarries have been opened up. *See* Table of Analyses *under* Limestone.

624A. —— ——. On railway near Mundubbera Rail. Stn., Burnett River. *Co.* Bowen; *Dist.* Burnett. Ref. B.D. *See* Table of Analyses *under* Limestone.

625. —— ——. *Loc.* Biggenden Mine, No. 2 Cutting, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 60, p. 1 (1890).

626. —— ——. *Assoc.with* Bismuth (native), Bismuthinite, Hematite (micaceous), and Calcite. *Loc.* Don Jon Mine, nr. Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn (Gayndah line). *Co.* Cook (*ante*). *Ref.* B.D.

627. —— ——. *Loc.* N.E. side of Scrubby (Paradise) Cr., 8 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 68, p. 1 (1891).

628. —— ——. Between Degilbo and Kilkivan Rail. Stn. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 194, p. 52 (1904).

628A. —— —— (*var.*). In large quantities and of good quality. *Loc.* 96¾-mile peg, Gayndah-Mundubbera Rail. line (under construction). *Co.* Mackenzie; *Dist.* Burnett. *Ref.* B.D.

629. —— ——. *Loc.* between Kabonga and Splinter Creeks, Mt. Cannindah, 40 miles S.W. of Miriam Vale Stn. (North Coast line). *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 194, p. 35 (1904).

630. —— ——. As large outcrops at New Cannindah Stn., Mt. Cannindah (*ante*). *Ref.* B.D.

631. —— ——. As large outcrops. *Loc.* Burnett R., on road between New Cannindah and Mt. Perry, 7 miles below Yarrol, about 20 miles from Mt. Perry Rail. Stn. *Co.* Yarrol (*ante*). *Ref.* B.D.

632. —— ——. *Loc.* Gorge Cr., to Zillmanton, Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 69, p. 2 (1891).

633. —— ——. *Loc.* Opposite Mt. Emma, 3 miles N.E. of Palmerville, 37 miles S.S.W. of Laura Rail. Stn. (Cooktown line). *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 12 (1887).

634. —— ——. *Loc.* Potosi Mine, Irvinebank, 10 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe line), 12 miles W.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook.

635. —— ——. *Loc.* Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

636 —— ——. *Loc.* In numerous localities at Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 3 (1891).

637. —— ——. *Loc.* Royal Arch Caves, 4 miles S.W. of Chillagoe Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

638. —— ——. *Loc.* Tower of London, 3 miles S. of Chillagoe Rail. Stn. (*ante*). *Ref.* B.D.

638A.—— ——. *Assoc.with* Hematite, Magnetite, Wollastonite, Chert, Garnet, and Epidote. *Loc.* Mt. Lucy, 4 miles W. of Almaden Rail. Stn. (Chillagoe line), 125 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 134, p. 16 (1898), and 196, pp. 6-8 (1905).

639. —— ——. *Loc.* Muldiva Road, W.S.W. of Almaden Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 2 (1891).

640. —— ——. *Loc.* N. of McIlwraith Lease, Redcap Cr., Zillmanton, 142 miles (by rail) W.S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 6 (1891).

641 —— ——. In masses. *Loc.* North of Walsh R., opposite junction of Rookwood Cr., 10 miles N.W. of Mungana Rail. Stn. (Chilagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

642. —— ——. In large masses, between Welcome Cr. and Rookwood Cr., br. of Walsh R., N.W. of Mungana (Chillagoe line) (*ante*). *Ref.* B.D.

643. —— ——. *Loc.* Commissioner's Hill, Gilberton, 66 miles S. of Georgetown, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* G.S.M.

644. —— ——. *Loc.* between the Burdekin and Einasleigh Waters. *Co.* ——; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 2 (1887).

645. —— ——. *Loc.* 5 miles N. of Glenelg, Warwick Road, about 35 miles W.byS. of Warwick. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 40, p. 1 (1887).

646. —— ——. *Loc.* Block R 1, Glenlyon Lease, 30 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* B.D. and P.R.S.Q., vol. 4, p. 73 (1887).

647. —— ——. In large quantities. *Loc.* 2 miles S.W.(?) of Silverwood Rail. Stn., nr. Warwick. Quarries are at Bald Mt., Lock's Sel., and Reeve's Sel. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 194, p. 65 (1904), and B.D. (1912). *See* Table of Analyses *under* Limestone.

648 —— ——. In quarries, Warwick, 169 miles (by rail) S.W. of Brisbane. *Co.* Merivale (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 73 (1887).

648A.—— ——. In large quantities. *Loc.* Gore Limestone Quarries, 4 miles from Gore Rail. Stn., and 48 miles (by rail and road) from Warwick. *Co.* Bentinck; *Dist.* Darling Downs. Ref. B.D. *See* Table of Analyses *under* Limestone.

649 —— ——. *Loc.* nr. Mount Garnet, 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q. vol. 15, p. 64 (1900).

650 —— ——. *Assoc.with* Ironstone and Garnet Rock. *Loc.* Newellton (Silver Valley), Dry R., 10 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*).

651 —— ——. *Loc.* Broken R., trib. of Clark R., 120 miles W.byS. of Townsville. *Co.* Clarke; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 35, p. 2 (1887).

652. —— ——. (dark blue.) *Loc.* on hill, W. of Reid's Gap Rail. Stn., N. of Torrent Cr., 30 miles S. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 2, p. 35 (1879).

653. —— ——. *Loc.* Ben Lomond, Gregory R., 18 miles S.E. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* O.R.

653A.—— ——, friable, and in large quantities, hundreds of tons exposed in bed of creek. *Loc.* (?) Don River, nr. Bowen Road, 10 miles S. of Bowen. *Co.* Herbert (*ante*). *Ref.* B.D.

654. —— ——. *Loc.* Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 1 (1892).

655. —— ——. *Loc.* Burdekin R., above Burdekin Downs Stn., 15 miles N. of Charters Towers. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 94, p. 12 (1893).

656. —— ——. *Loc.* nr. Hillgrove Stn., Basalt R., Dalrymple, 21 miles N.W.byN. of Charters Towers. *Co.* Wilkie Gray (*ante*). *Ref.* G.S.Q. Pub. 35, p. 12 (1887).

657. —— ——. *Loc.* nr. Mt. MacGregor, 2½ miles S.E. of Mt. Toby, 2½ miles N.N.E. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Analysis:* Silica = 19·88, Carbonate of Lime = 71·00, Iron and Alumina = 3·06, Carbonate of Magnesia = 0·76 per cent. *Ref.* G.S.Q. Pub. 164, p. 15 (1901).

658. Calcite (Limestone). *Loc.* Repulse Is., 46 miles N.N.W. of Mackay. *Co.* Carlisle (*ante*). *Analysis:* Carbonate of Lime = 84 per cent. *Ref.* B.D.

658A.—— ——. *Loc.* Glenmore, 16 miles N.W.byN. of Clermont. *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.M.

659. —— ——. *Loc.* Jack's Cr., trib. of Bowen R., 50 miles S.S.W. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 4, p. 23 (1879).

660. —— ——. *Assoc.with* Gold, in ironstone and quartz. *Loc.* Lincoln Leaders, Copperfield Road, 2½ miles S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 176, p. 22 (1902).

661. —— ——. *Loc.* Bellridge's Sel. (35), 3 miles below junction of Douglas and Drummond Crs., 4 miles S.E. of Copperfield, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 148, p. 3 (1900).

662. —— ——. *Loc.* Douglas Cr., Copperfield, 5 miles S.S.W. of Clermont (*ante*). *Ref.* L.B., p. 762 (1886).

663. —— ——. *Assoc.with* Ironstone. *Loc.* nr. Mt. Clifford, between Retreat and Ruby Creeks, 9 miles (by road) N.W. of Anakie Rail. Stn. *Co.* Clermont; (*ante*). *Ref.* G.S.Q. Pub. 127, p. 2 (1898).

664. —— ——. Pine Mountain, 7 miles (by rail) N.W. of Ipswich. *Co.* Churchill; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 194, p. 58 (1904).

664A.—— ——. Small lenticular beds occur in association with calcareous shales and sandstones belonging to the Ipswich Coal Measures. *Loc.* About Flinders, Munbilla, and Anthony, on the Ipswich-Fassifern Rail. Line. *Co.* Churchill; *Dist.* Moreton. *Note:* Some of the lenses of limestone contain 70 per cent. of carbonate of lime, but large beds of sandstone exist which contain from 30 to 40 per cent. of carbonate of lime. *See* Table of Analyses *under* Limestone.

664B. —— ——. Ryan's Sel. and at base of Mt. Cross, 8 miles northerly from Helidon Rail. Stn. *Co.* Cavendish; *Dist.* Moreton.

665. —— ——. *Assoc.with* Chalcedony, Chert, Magnesite, and Ironstone. *Loc.* Limestone Hill, Ipswich, 24 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 194, p. 58 (1904), G.S.M., and B.D. *See* Table of Analyses *under* Limestone.

666. —— ——. *Loc.* Booreeco Cr., 30 miles S.W. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 194, p. 34 (1904).

667. —— ——. Marblestone, between Tucker's Gully and Boyne R., 20 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1885), 194, p. 33 (1904).

668. —— ——. *Loc.* Marblestone Road, Boyne R. (*ante*). *Ref.* G.S.Q. Pub. 194, p. 34 (1904).

669. —— ——. *Loc.* New Zealand Gully, Boyne Goldfield, 5 miles S.E. of Calliope, 17 miles S.E. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

670. —— ——. Brennan's Flat, 3 miles S.S.E. of Calliope, 15 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

671. —— ——. *Loc.* Calliope R., from 10 to 24 miles S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194. pp. 31, 32 (1904).

672. —— ——. *Loc.* nr. Catfish, 21 miles S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 34 (1904).

673. —— ——. *Loc.* Diglum Cr., 30 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 34 (1904).

674. —— ——. *Loc.* Bompa Copper Mine (Lease 5), Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn., 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 29 (1904).

675. —— ——. *Glassford Cr.* (*ante*). *Ref.* G.S.Q. Pub. 194. p. 35 (1904).

676. —— ——. *Loc.* Gordon Gully, trib. of Leixlip Cr., 4 miles S.E. of Calliope, 16 miles S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

677. —— ——. Bald Hills, 6 miles S. of Langmorn, 14 miles W.S.W. of Gladstone. *Co.* Deas Thomson; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

678. —— ——. On hill near Langmorn, 8 miles W. of Gladstone. *Co.* Deas Thomson (*ante*). *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

679. —— ——. In large quantities. Grey's Quarries, Raglan, 22 miles S.E. of Rockhampton, on Gladstone-Rockhampton Rail. line. *Co.* Deas Thomson (*ante*). *Ref.* G.S.Q. Pub. 194, p. 22 (1904). *See* Table of Analyses *under* Limestone.

679a. —— ——. A large outcrop extending over many acres. *Loc.* Ambrose Quarry, $\frac{3}{4}$-mile S.W.(?) of Ambrose Rail. Stn. (Gladstone-Rockhampton line). *Co.* Deas Thompson (*ante*). *Ref.* B.D. *See* Table of Analyses *under* Limestone.

679b. —— ——. Two hills, McDonald's Sel., 2 miles from Raglan Rail. Stn., and $\frac{3}{4}$-mile W. of line. *Ref.* B.D. *See* Table of Analyses *under* Limestone.

680. —— ——. *Loc.* Jones's Quarry, nr. Rosedale Rail. Stn., 34 miles (by rail) N.W. of Bundaberg. *Co.* Flinders; *Dist.* Port Curtis. *Analysis:* Carb. of Lime = 97 per cent.

681. —— ——. Bedded with shales, etc. *Loc.* 8 miles from Rosedale Rail. Stn., $\frac{1}{2}$ mile from McRitchie's Wolfram Mine, nr. road, 42 miles (by rail and road) N.W. of Bundaberg. *Co.* Flinders (*ante*). *Analysis*: Carbonate of Lime = 98·88 per cent., Silica = 1·12 per cent. *Ref.* B.D.

682. —— ——. North of Fitzroy R., 24 miles above Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 22 (1904).

682a. —— ——. In large quantities at low levels. Fitzroy River, at Glenmore Quarries, 1 mile from Glenmore Rail. Stn., 4 miles from Rockhampton (*ante*). *Ref.* B.D. *See* Table of Analyses *under* Limestone.

683. —— ——. Left bank above Long Is., Fitzroy R., near Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.M.

684. —— ——. *Loc.* Johannsen's Caves, nr. Mt. Etna, 16 miles N.N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 86, p. 2 (1892).

685. —— ——. Olsen's Caves, nr. Mt. Etna (*ante*). *Ref.* G.S.Q. Pub. 86, p. 2 (1892). *See* Table of Analyses *under* Limestone.

685a. —— ——. *See* 539.

686. —— ——. *Loc.* Tungamul, 18 miles (by rail) E.N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Analysis:* Silica and insoluble = 0·32 per cent., Lime = 54·60 per cent.

687. —— ——. *Loc.* Hunter Is., Duke Group, 45 miles N.E.byE. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, pp. 21, 22 (1904).

688. —— ——. Marble Is., Duke Group (*ante*). *Ref.* G.S.Q. Pub. 194, p. 20 (1904).

689. —— ——. *Loc.* Mortar Is. (Duke Group) (*ante*). *Ref.* G.S.Q. Pub. 194, p. 20 (1904). *See* Table of Analyses *under* Limestone.

690. —— ——. *Loc.* Northumberland Islands, 45 miles N.E.byN. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* P.R.S.Q. vol. 4, p. 74 (1887). *Analysis:* Carbonate of Lime = 96 per cent.; Foreign matter = 2 per cent.

691. —— ——. *Loc.* Three Moon Cr., Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 8 (1885).

692. —— ——. *Loc.* Glen Dee, Dee R., 5 miles E.N.E. of Mt. Morgan. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 161, p. 15 (1901).

693. —— ——. *Loc.* Daylesford, 36 miles (by rail) W.S.W. of Bundaberg (Mt. Perry line). *Co.* Bowen; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 194, p. 50 (1904). *See* Table of Analyses *under* Limestone.

694. —— ——. *Assoc. with* Iron Pyrites. *Loc.* Por. 1230, Walla, Gin Gin, 29 miles (by rail) W.byS. of Bundaberg (Mt. Perry line). *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 194, p. 51 (1904).

695. —— ——. Gigoomgan Head Stn., and at Glenbar, 12 miles S. of Aramara Stn. (Gayndah line), 35 miles W.S.W. of Maryborough. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 194, p. 52 (1904). *Note.*—In large quantities.

696. —— ——. *Loc.* Kilkivan, 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). *Analysis:* Carbonate of Lime = 50·83 per cent., Carbonate of Iron = 26·00 per cent., Silica = 15·13 per cent., Mercury Sulphide = 7·01 per cent.

697. —— ——. 4 miles from Curra, 14 miles (by rail and road) N. of Gympie (North Coast line), *Sel.* 87; *Par.* Curra; *Co.* March; *Dist.* Wide Bay. Beds about 50 feet thick. *Ref.* B.D. *See* Table of Analyses *under* Limestone.

698. —— ——. Tamaree, 5 miles (by rail) N. of Gympie (North Coast line). *Co.* March (*ante*). *Ref.* B.D. *See* Table of Analyses *under* Limestone. Large quantities available.

698a. —— ——. Old Cemetery, Gympie, nr. Rail. Station. *See* Table of Analyses *under* Limestone. Large quantities available.

699. —— ——. *Loc.* Aure R., nr. Purari R., 192 miles N.W. of Port Moresby, **British New Guinea.** *Ref.* A.R.B.N.G., p. 95 (1894).

700. Calcite (Limestone). *Loc.* Bell Rock, about 277 miles E.byS. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 10 (1892).

701. —— ——. Boioro, 170 miles E.S.E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, pp. 11, 18 (1892).

702. —— ——. Einauro (Cette) Is., 175 miles E.S.E. of Port Moresby, (*ante*). *Ref.* G.S.Q. Pub. 85, pp. 10, 18 (1892).

703. —— ——. Kimuta Is., Renard Group, 409 miles E.byS. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 10 (1892).

704. —— ——. Launoka Doudou (Mayri Bay), 165 miles S.E.byE. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, pp. 11, 18 (1892).

705. —— ——. Mt. Geaoro, near Port Glasgow, 173 miles E.S.E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 18 (1892).

706. —— ——. On spur near Mt. Pullen, 6 miles E.N.E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 13 (1892).

707. —— ——. Molurina (Mewstone) Is., 384 miles E.S.E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 27 (1892).

708. —— ——. Pannietta Is., 360 miles E.byS. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 10 (1892).

709. —— ——. Port Glasgow, 173 miles E.S.E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 18 (1892).

710. —— ——. Purari Mountain (3,000 ft.), 204 miles N.W. of Port Moresby (*ante*). *Ref.* A.R.B.N.G. 1894, p. 94.

711. —— ——. Bevan Falls, Purari R., 212 miles N.W. of Port Moresby (*ante*). *Ref.* A.R.B.N.G. 1894, p. 94.

712. —— ——. St. Aignan (Misima) Is., 379 miles E.byS. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 10 (1892).

713. —— ——. Gulewa Cr., St. Aignan (Misima) Is. (*ante*). *Ref.* G.S.Q. Pub. 85, p. 26 (1892).

714. —— ——. Taupota, 224 miles E.byS. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 20 (1892).

715. —— ——. Ware (Teste) Is., 288 miles E.S.E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 10 (1892).

716. ——. **(Black Limestone.)** *Loc.* near Wycheproof Stn., about 10 miles W.S.W. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

717. ——. **(Cone-in-Cone Limestone)**, as large outcrops. *Loc.* Bynoe R., at road crossing, nr. Normanton. *Co.* Normanton; *Dist.* **Burke.** *Ref.* B.D.

718. ——. **(Coralline Limestone.)** *Loc.* Glen Mowbray, 1½ mile North of Thornborough, Hodgkinson Goldfield. **Co.** Hodgkinson; **Dist.** Cook. *Ref.* P.R.S.Q., vol. 4, p. 73 (1887).

719. —— ——. *Loc.* Burdekin Downs, Burdekin R., about 16 miles N. of Charters Towers. *Co.* Davenport; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 1, p. 17 (1879).

720. —— ——. On mountain nr. Double-barrel Cr., about 27 miles (by rail) S. of Townsville (Great Northern line). *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 2, p. 35 (1879).

721. —— ——. *Loc.* Fanning River, 3 miles S. of Fanning R. Stn., about 45 miles S.byW. of Townsville. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 1, p. 17 (1879).

722. —— ——. *Loc.* Hill, nr. Reid's Gap Rail. Stn. (Philp's Siding) (Great Northern line), 30 miles (by rail) S. of Townsville. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 2, p. 35 (1879).

723. —— ——. On Little Cr., between Arthur's Cr. and Burdekin Downs Stn. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 1, p. 17 (1879).

724. —— ——. East of Raglan Goldfield Reserve, 34 miles W.S.W. of Gladstone, on North Coast line. *Co.* Deas Thomson; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

725. —— ——. *Loc.* Kroombit Cr., 5 miles above Kroombit Head Stn., 55 miles S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 35 (1904).

726. —— ——. *Loc.* Deboyne Group, Louisiade Archipelago, 368 miles E.byS. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 25 (1892).

727. —— ——. *Loc.* Delena (Hall Sound), 60 miles N.W. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 15 (1892).

728. —— ——. Kimuta Is., Renard Group, 409 miles E.byS. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 26 (1892).

729. —— ——. Maiva Hills, S.E. of Cape Possession, 76 miles N.W.byN. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 15 (1892).

730. —— ——. Along the coast towards Phillip's Harbour, 260 miles E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 2 (1892).

731. —— ——. Gumonina Cr., St. Aignan's (Misima) Is., 379 miles E.byS. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 26 (1892).

732. ——. **(Crinoidal Limestone.)** *Loc.* Marmor Quarries, 42 miles (by rail) W.S.W. of Gladstone (North Coast line). *Co.* Deas Thompson; *Dist.* **Port Curtis.** *Ref.* B.D.

733. —— ——. *Loc.* Mt. Etna, 15 miles N.N.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* Q.M.

734. ——. **(Fossiliferous Limestone.)** *Loc.* Mt. Grim, 31 miles W.S.W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.M.

735. —— ——. *Loc.* Favosites Point, Hunter Is., Broadsound, 45 miles N.E.byE. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* G.S.M.

736. —— ——. *Loc.* Gigoomgan Head Stn., 35 miles W.S.W. of Maryborough. *Co.* Lennox; *Dist.* **Wide Bay.**

737. —— ——. *Loc.* Camp 120 miles up Purari R., 214 miles N.W. of Port Moresby, **Brit. New Guinea.** *Ref.* A.R., B.N.G. 1894.

738. —— ——. *Loc.* 136 miles up Purari R., 230 miles N.W. of Port Moresby (*ante*). *Ref.* A.R.B.N.G. 1894, p. 95.

739. ——. **(Freshwater Limestone),** in basaltic soil. *Loc.* The Springs, 10 miles N.N.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.**

740. ——. **(Magnesian Limestone.)** *Loc.* 2 miles S. of Mt. Leviathan, Cloncurry. *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 5 (1885).

741. —— ——. *Loc.* Kamilaroi Stn., Leichhardt R., 99 miles N.N.W. of Cloncurry. *Co.* Landsborough; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 8 (1885).

742. —— ——. *Loc.* Langdon Downs, 6 miles E. of Clermont. *Co.* Clermont; *Dist.* Leichhardt. *Analysis:* Free Silica = 2·2; Combined Silica = 2·9; Iron and Alumina = 4·5; Lime = 52·7; Magnesia = 38·5 per cent. *Ref.* G.S.Q. Pub. 148, p. 7 (1900).

743. ——. **(Oolitic Limestone.)** *Loc.* Mt. Grim, 30 miles W.S.W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.M.

745. —— ——. *Loc.* Between Warren and Mt. Lion, 16 miles W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 149 (1900).

746. ——. **(Calcareous Sinter.)** *Loc.* Near Hot Springs, Musgrave Telegraph Station, 80 miles N.W. of Laura Rail. Stn. (Cooktown line). *Co.* Hann; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 1 (1901).

747. —— ——. *Loc.* Einasleigh Hot Springs, 45 miles E.N.E. of Georgetown. *Co.* Tate; *Dist.* Cook. *Ref.* G.S.M.

748. ——. **(Travertine.)** *Loc.* Downfall Cr., br. of Jimbour Cr., 30 miles N.N.W. of Dalby. *Co.* Lytton; *Dist.* **Darling Downs.**

749. —— ——. *Loc.* Springsure, 206 miles (by rail) W.S.W. of Rockhampton (Central line). *Co.* Denison; *Dist.* **Leichhardt.** *Ref.* G.S.M.

750. —— ——. *Loc.* Mt. Misery, 5 miles N.N.W. of Stanwell Rail. Stn. (Central line). *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

751. ——. **(Tufa.)** *Loc.* Olsen's Caves, nr. Mt. Etna, 15 miles N.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.M.
See also under Limestone for further references.

Calcite Reef, Norton Goldfield. *Min.Ref.* Calcite, *see* 531; Gold, 4268.

Calcium. (Ca). *Atom. Wt.* = 40·07. *Sp.gr.* = 1·554. MINERALS: *See* Calcite (and *vars.*), Dolomite, Apatite, Fluorspar, Gypsum; *see also under* Silicates of Lime, etc.

USES: Calcium in its metallic form has very few industrial applications, but lime, formed by burning the carbonate to an oxide, has a variety of uses in building construction and decoration. Lime, when treated with chlorine gas, forms chloride of lime (bleaching powder), and when heated with coke in an electric furnace forms calcium carbide. If fused with silica and clay in definite proportions, and then ground, it makes Portland Cement. *Limestone,* when used for making lime, must be free from iron, and should contain very little silica, alumina, or magnesia, but in Portland Cement manufacture the limestone may contain silica, clay, and a few per cent. of iron oxide, as these substances enter into the composition of the cement. Limestone is an important flux for silica and siliceous gangues, and is used in nearly all smelting operations for copper, silver, iron, etc. Silica in limestone, for obvious reasons, is undesirable, but iron oxides are usually of advantage in helping to form fusible slags. In ornamental and decorative work, coloured and banded limestones and marbles are extensively used, but no attempt has been made to exploit the numerous deposits of fine limestones known to exist in many parts of the State. *Fluorspar,* the fluoride of lime, is a common flux in some processes of steel manufacture and in iron foundries, and is a useful addition to limestone flux when trouble is experienced in slaging charges in smelting furnaces. Fluorspar is also used in enamelling processes, in glass-staining, and in the manufacture of hydrofluoric acid which is applied to etching glass; finer qualities are made into vases and other carved and turned ornaments. The phosphates of lime, *Apatite,* Rock Phosphate, Guano, etc., are commonly utilised as fertilisers, both in their natural condition and after treatment with sulphuric acid to convert them into "superphosphates." *Gypsum (Alabaster, Selenite,* etc.), is commonly used in the manufacture of Plaster of Paris, the crystallised variety, Selenite, which occurs at Mt. Elliot, near Cloncurry, being eminently suited for this purpose. Compact Gypsum is also good for plaster-making, but it usually contains clay and carbonate of lime as impurities. Plaster of Paris should absorb its own weight of water, although the finer quality, made from crystal, does this more slowly than that made from compact Gypsum. Alabaster, the white, massive, finely-granular variety of Gypsum, in addition to being used in making Plaster of Paris, is in demand for ornamental and statuary purposes, and is commonly known as Parian Marble.

—— Carbonates. *See* Dolomite, Calcite, Aragonite, Ankerite.

—— Fluoride. *See* Fluorspar.

—— Phosphates. *See* Apatite.

—— Sulphate. *See* Gypsum.

Calcspar. *Syn.* of Calcite, *which see.*

Calder's (Wimmera) Bore. *See under* Artesian Bores. No. 335.

Caldwell's Claim, 12-mile Diggings, S.W. of Copperfield. *Min.Ref.* Gold, *see* 4162.

Caledonian Coal Mine, Walloon, nr. Ipswich. *Min.Ref.* Coal, *see* 1725.

Caledonian Copper Mine, Paradise Goldfield. *Min.Ref.* Copper Ore, *see* 2024.

—— —— ——, Dry R., br. of Wild R. (Upper Herbert), 12 miles S.S.W. of Herberton. *Min.Ref.* Cerussite, *see* 1219; Galena, 2849; Massicot, 6533; Linarite, 5937.

—— —— ——, Mt. Perry. *Min.Ref.* Copper (native), *see* 1989; Cuprite, 2417, 2419; Malachite, 6190.

—— Cr., br. of Goldsmith Cr., Etheridge Goldfield. *Min.Ref.* Chalcanthite, *see* 1319; Copper Carbonate, 1886; Copper Pyrites, 2144; Gold (alluvial), 3400, (reef) 3736; Hematite, 4708; Iron Pyrites, 5053; Ironstone, 5521; Limonite, 5841; Manganese-dioxide, 6406; Silver, 7450A.

—— Gold Mine, Gilberton. *Min.Ref.* Gold, *see* 3830.

Caledonian Gold Mine, Reid's Cr. Goldfield. *Min.Ref.* Gold, *see* 3592; Iron Pyrites, 4990A; Mispickel, 6650.

—— —— ——, Sudest Is., Brit. New Guinea. *Min.Ref.* Gold, *see* 4556; Hematite, 4810; Iron Pyrites, 5476; Limonite, 5931; Psilomelane, 7107.

—— P.C., Maxwellton Goldfield. *Min.Ref.* Gold, *see* 4261.

—— Reef, Charters Towers. *Min.Ref* Galena, Gold, Iron Pyrites, *see* 3951.

—— —— (Highland Mary), Croydon Goldfield. *Min.Ref.* Felspar, *see* 2624; Gold, 3484, 3524; Graphite, 4575; Iron Pyrites, 4955.

—— ——, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3734; Mispickel, 6683.

—— ——, Caledonia Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3736; Hematite, 4708; Limonite, 5841; Iron Pyrites, 5053.

—— ——, Lane's Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3715.

—— ——, Gympie Goldfield. *Min.Ref.* Gold, *see* 4499.

—— ——, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3701.

—— ——, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— ——, Rosewood Goldfield. *Min.Ref.* Gold, *see* 4351; Iron Pyrites, 5412. *See* Supplementary Report List, No. 17.

—— Run Bores. *See under* Artesian Bores. No. 194.

—— United L. (312), Gympie Goldfield. *Min.Ref.* Gold, *see* 4422.

—— Tin Mine, Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1237; Galena, 2962.

—— —— ——, Mt. Hartley, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 802.

—— —— ——, Watsonville. *Min.Ref.* Cassiterite, *see* 889; Copper Ore, 2026.

Calgoa Copper Mines, 15 miles N.byW. of Kilkivan Rail. Stn. *Min.Ref.* Azurite, *see* 180, 261, 262; Copper Pyrites, 2321, 2322; Cuprite, 2481, 2482; Galena, 3073; Hematite, 4805; Iron Pyrites, 5445; Limonite, 5923; Malachite, 6376-6378; Mispickel, 6811; Redruthite, 7306; Tenorite, 7744.

Geological Note: The country rocks are granite, slate, and diorite, the latter intruding the slate. Deposits of copper occur in the granite close to the slate, in association with an ironstone-quartz gossan. *See* G.S.Q. Pub. No. 207 for details.

Calgoa West Lode, Sel. (1393) (*ante*). *Min.Ref.* Azurite, *see* 262; Copper Pyrites, 2322; Galena, 3073; Mispickel, 6811; Malachite, 6377.

Calico Creek, Gympie. *Min.Ref.* Barytes, *see* 282A.

California Cr., nr. Ord (Mt. Garnet Br. Rail. line). *See maps*, Pls. 8, 9, 22. *Min.Ref.* Cassiterite, *see* 923-928; Dolomite, 2587; Galena, 2788, 2789; Gold, 3766; Hornblende, 4829; Iron Pyrites, 5072-5073A; Limonite, 5842; Mispickel, 6700; Monazite, 6875, 6876; Molybdenite, 6836, 6837; Spinel, 7574; Topaz, 7787; Tenorite, 7721; Wolfram, 7959, 7960.

Geological Note: The country rocks are greywacke and granite, tin ore occurring in the former near the granite. *See* G.S.Q. Pub. No. 192 for notes and map.

—— —— (head of), 6 miles E. of Ord (Mt. Garnet line). *Min.Ref.* Cassiterite, *see* 926; Monazite, 6876; Wolfram, 7961.

—— Reef, Reid's Cr., Mt. Perry. *Min.Ref.* Galena, *see* 2721A; Gold, 3593; Iron Pyrites, 4991; Mispickel, 6651; Zinc-Blende, 8064.

Callaghan's Gully, Seven-mile Diggings. *Min.Ref.* Gold (alluvial), *see* 3368.

—— Reef, New Homestead Diggings. *Min.Ref.* Gold, *see* 4068.

Callandoon North Bore. *See under* Artesian Bores. No. 274.

Callan's Claim, Clermont Goldfield. *Min.Ref.* Gold, *see* 4148A.

—— Knob, 1 mile W. of Mt. Morgan. *See* Pl. 35. *Min.Ref.* Kaolin, *see* 5704.

—— Twins P.A., Thane's Cr. Goldfield. *Min.Ref.* Gold, *see* 3864; Iron Pyrites, 5126.

Callide Cr. Coalfield, 52 miles S.W.byW. of Gladstone. *Lat.*, about 24° 16′—34° 30′ S.; *Long.*, about 150° 30′—15′ E. *Min.Ref.* Coal, *see* 1803. *See also under* Gov. Mining Journal, Report No. 64, and "Test of Callide Coal" in Gov. Ming. Jour., Oct., 1912, p. 524, the latter article containing an account of 4½ tons boiler test by Harbours and Rivers Department.

Geological Note: The rocks about the Callide consist of slates, etc., of Gympie Formation (Permo-Carboniferous), sandstones and shales of Ipswich Formation (Trias-Jura), and granite. In the Ipswich Formation there are very thick coal seams of good quality, and prospecting operations, it is said, have recently shown that a coal seam exists 54 feet thick. *See* G.S.Q. Pub. No. 80 for details, and Gov. Ming. Jour., 1906 (vol. 7), p. 139, for notes.

—— Creek. Heads at Dawes Range, flows W. and N. into Dee R. 70 miles W. of Gladstone. *Min.Ref.* Copper Carbonate, *see* 1963; Gold (alluvial), 3399; Magnetite, 6053.

—— (or 5-mile) Copper Mine, Kroombit, S.S.W. of Gladstone. *Min.Ref.* Copper Carbonate, *see* 1961; Copper Pyrites, 2306; Hematite, 4799; Hornblende, 4868; Iron Pyrites, 5414; Magnetite, 6054; Manganese-dioxide, 6480.

Callide Range, Mt. Rainbow Goldfield. *Min.Ref.* Gold (alluvial), *see* 3400.

Geological Note: The Range consists principally of rocks belonging to the Gympie Formation (Permo-Carboniferous), capped in places by basalt. *See* G.S.Q. Pub. No. 126 for notes and map.

Calliope Goldfield—

Situation: *Lat.*, 24°—24° 10′ S.; *Long.*, 167° 10′—151° 20′ E. *See maps*, Pls. 2, 3, 34. The township is situated about 12 miles S.S.W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis.

Discovery: Here in December, 1853, Geologist Stutchbury made the first discovery of an alluvial gold deposit in Queensland. In March, 1862, the first development of the alluvial deposits took place. The reefs were first worked by Pascoe in 1870.

Proclamation of Field: First gazetted, 26th May, 1863; last, in 1871, as follows:—Commencing at the north-east corner of portion 53, par. of East Stowe, and bounded thence on the west by the east boundaries of portions 53 and 54, and a line bearing south 3 miles; on the south-west by a line bearing south-east 4 miles, crossing the Boyne Range about ¾ of a-mile southerly from Nuggety Gully; on south-east by a line bearing north 30 degrees east 5 miles and 58 chains; on the north by a line bearing west 6 miles and 15 chains, crossing the Boyne Range, to the point of commencement.

Area: 15,360 acres (24 square miles).

Principal Mining Centres: Nuggety Gully, New Zealand Gully, Tucker's Gully, *which see.*

Mineral Statistics: *Included in* "Other Goldfields" *in tables and diagram*, Pls. 36, 46, 46a, 47.

Mineral References: **Gold** (alluvial), *see* 3380-3385; (nugget), 3444; (reef), 4257-4259; Iron Pyrites, 5362, 5363; Limestone, 670; Calcite, 526, 527; Sanidine, 7055.

Geological Note: The principal rock on the field is an altered slate, but granite, limestone, serpentine, diorite, and porphyry also occur, the three latter forming dyke masses. Gold-bearing reefs have been worked, but most of the gold found in this locality was obtained from alluvial deposits. *See* G.S.Q. Pubs. 21, p. 3, and 92, p. 107, for details.

Geological Publications: Reports—Nos. 21 (1885), 48 (1888), and 58 (1890). *See* Geol. Sur. Pub. List for title. *See also* Supplementary Report List, No. 22.

Warden: Stationed at Gladstone.

Inspector of Mines: Stationed at Rockhampton.

Calliope Gold Reef, Lane's Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3715.

—— River. *See* Pl. 34. Heads at Dawes Range 35 miles W.S.W. of Gladstone, and flows N.E., passing near Calliope into Port Curtis about 5 miles N.W. of Gladstone. Length, 45 miles. *Min.Ref.* Actinolite, *see* 4866; Alabaster, 4634; Gypsum, 4631; Limestone, 671; Magnetite, 6038; Malachite, 6356; Marble, 591.

—— —— and Targinnie Cr. (between), 7 miles W. of Gladstone. *Min.Ref.* Psilomelane, *see* 7099.

Calories. *See* note at end of Approximate Analyses *under* Coal.

Caloundra Head, 45 miles N. of Brisbane. *Lat.*, 26° 47′ S.; *Long.*, 153° 11′ E. Coal discovered at Wickham Point by Geologist Stutchbury 1854. *Min.Ref.* Coal, *see* 1713, 1714. *Rainfall:* See under separate heading.

Geological Note: The rocks comprise sandstones, shales, and small coal seams belonging to the Ipswich Formation (Trias-Jura). Moffat's Lagoon contains an outcrop of coal about five inches thick at about six feet below water level, and other smaller bands are known in the neighbourhood.

Calton Hills Group of Copper Mines, Gunpowder Cr., Cloncurry. *Includes* Overlander M.L. (661) only. *Min.Ref.* Malachite, *see* 6162.

Calumat Copper Mine, Chillagoe. *Min.Ref.* Copper (ore), *see* 2028.

Camara Sub-artesian Bore. *See under* Artesian Bores. No. 141.

Camarooka Bore. *See under* Artesian Bores. No. 255.

Camboon Mine, Upper Dawson R. *Min.Ref.* Gold, *see* 4171; Hornblende, 4840; Iron Pyrites, 5327.

Cambooya. 24 miles (by rail) S.W. of Toowoomba. *Min.Ref.* Coal, *see* 1619.

Cambria Copper Lode (All Nations Reef), Mt. Perry. *Min.Ref.* Gold, *see* 3564.

Cambridge Cr. Diggings, N.N.W. of Hughenden. *Min.Ref.* Gold (alluvial), *see* 3172A.

Cambridge Downs, N.N.W. of Richmond. *Lat.*, 20° 16′S. *Long.*, 143° E. *Min. Ref.* Muscovite, *see* 6885.

—— —— Run Bores. *See under* Artesian Bores. Nos. 195, 196.

Camden Park Bore. *See under* Artesian Bores. No. 364.

Cameby (Par. of) (Por. 15), 11 miles S. of Chinchilla. *Min.Ref.* Coal, *see* 1626(1).

Cameron (Glen). Once Acting Under Secretary for Mines. Term of office—1887 to 1891.

Cameron (Walter E.), B.A., Assist. Govt. Geologist—

Geological Survey Publications:

Pub.	(*See* List *under* "Geol. Surv." for details.)	*Year.*
126.	On the Geology of the Basalt Workings, Mount Rainbow Goldfield	1897
138.	On the Lawn Hills Silver-Lead Company's Properties, Mended Hill, North Queensland	1900
143.	Annual Progress Report of the Geological Survey for the Years 1896-8	1899
147.	On the Geology of the West Moreton or Ipswich Coal Field	1899
150.	Annual Progress Report of the Geological Survey for the Year 1899	1900
151.	On the Etheridge and Gilbert Gold Fields	1900
153.	On the Recent Developments in the Copper Mining Industry in the Cloncurry District	1900
159.	Annual Progress Report for the Year 1900	1901
165.	On the Cardigan, Queensland, Tin Syndicate Properties, and the Coolgarra Federal Tin Corporation, Limited, Leases, Thompson's Creek, Herberton Mineral District	1901
167.	On the Kangaroo Hills Mineral Field	1901
174.	On the Coal Beds of Waterpark Creek, near Port Clinton ...	1902
175.	Annual Progress Report for the Year 1901	1902
181.	Additions to the Geology of the Mackay and Bowen Districts	1903
183.	Recent Mining Developments on the Ravenswood Goldfield	1903
187.	Sketch Map of the Walsh and Tinaroo Mineral Field. Scale 2 miles to an inch	1904

Cameron (Walter E.), B.A., Assist. Govt. Geologist—*continued.*

Geological Survey Publications—continued:

188. Wolfram and Molybdenite Mining in Queensland 1904

192. The Herberton Tin Field 1904

200. The Central Queensland (Dawson-Mackenzie) Coal Measures. Their continuation towards Mackay and Nebo Districts ... 1905

204. Second Report on the West Moreton (Ipswich) Coal Field, with Special Reference to the Bundamba District 1906

209. Some Goldfields in the Cape York Peninsula: (i.) The Starcke Goldfield; (ii.) The Alice River (Philp) Goldfield; (iii.) The Hamilton Goldfield; (iv.) The Coen Goldfield 1907

210. The Annan River Tin Field, Cooktown District 1907

219. Second Report on the Etheridge Goldfield 1909

224. The Charters Towers Goldfield. Notes on the Main Reefs ... 1909

235. Records No. 3 (i.) Coal on the North Ipswich Coal and Coke Company's Property; (ii.) Coal near Dalby; (vii.) The Granite Castle Lode, Mount Emu Plains Station, Hughenden District; (ix.) Gold on Whitty's Freehold, Ormeau; (x.) The Tin Lodes of Sandy Creek, Charters Towers District; (xi.) Olivines in the Toowoomba Basalts 1911

QUEENSLAND GOVERNMENT MINING JOURNAL:

Notes on Targinnie Reefs. In vol. 2, p. 529 1901

On Dattu Dattu Mine, Brisbane. In vol. 4, p. 188 1903

On Alluvial Gold Workings on Squirrel Cr., Monsildale Run. In vol. 5, p. 554 1904

Possibility of the Discovery of Oil in Queensland, etc. In vol. 6, pp. 17, 18 (1905), and vol. 9, p. 591 1908

Second report on Kangaroo Hills Mineral Field. In vol. 7, p. 239 1906

On Coal and Gravel at Nundah. In vol. 8, p. 11 1907

On Proposal to Test the Lower Measures, Burrum Coalfield. In vol. 11, p. 341 1910

On Moller and Bennett's Copper Workings, near Murphy's Creek. In vol. 11, p. 342 1910

On Discovery of Coal near Dalby. In vol. 11, pp. 388-390, etc. 1910

On Ipswich Coal and Coke Syndicate's Property, Tivoli, North Ipswich. In vol. 11, p. 603 1910

On Mt. Thabor Coal Property, near Warwick. In vol. 11, p. 605 1910

On Olivines in the Toowoomba Ranges. In vol. 12, p. 115 ... 1911

On Bennion's Block Mine, Croydon. In vol. 12, p. 282 1911

The Search for Oil at Roma. In vol. 12, p. 508 1911

Prospects of Natural Gas and Petroleum in the Roma District. In Vol. 14, p. 179 1913

SUPPLEMENTARY REPORTS: *See* List under separate heading. No. 91, 113, 116, 117, 118, 119, 120, 121, 122, 123, 126, 139, 140, 150.

Cameron *Co.* Gregory South Dist. *See map,* Pl. 18.

—— Downs Bore. *See under* Artesian Bores. No. 197.

—— River, 18 miles N.E. of Muttaburra. *Min.Ref.* Ironstone, *see* 5605.

Cameron River Mining Centre, Cloncurry. *Includes* Euston, Federal, Mount Lloyd Groups of Copper Mines, *which see.* *Min.Ref.* Azurite, *see* 150A; Chrysocolla, 1489A; Copper (native), 1974; Copper Pyrites, 2060A, 2060B; Cuprite, 2383; Limonite, 5740A, 5740B; Malachite, 6069A, 6069B.

Cameron's Bores. *See under* Artesian Bores. Nos. 196, 304.

—— Leader, Upper Percy, Etheridge Goldfield. *Min.Ref.* Agate, *see* 1370; Gold, 3798.

—— Lookout, Mt. Rainbow Goldfield. *Min.Ref.* Gold (alluvial), *see* 3400; Jasper, 5667.

Cameronian M.C. (196), Euston Group, Cloncurry. *Min.Ref.* Chrysocolla, *see* 1489A; Copper Pyrites, 2060A; Limonite, 5740A; Malachite, 6069A.

—— Reef, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3838; Iron Pyrites, 5110.

Cammie M.L. (477), Cloncurry. *Min.Ref.* Cuprite, *see* 2384B; Malachite, 6078A.

Camoola West and East Districts Bores. *See under* Artesian Bores. Nos. 198, 199. *Min.Ref.* Coal, *see* 1707B.

—— Creek Sub-artesian Bore. *See under* Artesian Bores. No. 207.

—— Park Bore. *See under* Artesian Bores. No. 199.

Camoomilla Cr., Magnetic Is., Cleveland Bay. *Min.Ref.* Gold (alluvial), *see* 3260, (reef) 3999.

Camooweal Bore. *See under* Artesian Bores. No. 12. Rocks here are Devonian (?) limestone.

Camp Hill Range, head of Canal Cr., W.byS. of Warwick. *Min.Ref.* Gold (alluvial), *see* 3250.

Camp Reserve, Spring Cr., Stanthorpe. *Min.Ref.* Cairngorm, *see* 7177; Cassiterite, 1022A; Hyacinth, 8231; Rock Crystal, 7190; Sapphire, 2350; Tourmaline, 7859; Zircon, 8231.

Campbell's Bores. *See under* Artesian Bores. Nos. 146, 155, 240, 346.

—— Reef, Yorkey's Goldfield. *Min.Ref.* Calcite, *see* 557; Gold, 4410; Graphite, 4606; Hematite, 4806; Iron Pyrites, 5453.

—— Reef (east of), Yorkey Goldfield. *Min.Ref.* Garnet, *see* 3148.

—— (Helidon) Spa Bore. *See under* Artesian Bores. No. 288.

—— (Malboona) Bore. *See under* Artesian Bores. No. 329.

—— Cr. (head of), Maytown. *Min.Ref.* Cassiterite, *see* 834; Ruby, 2358.

—— Gully. Runs W.S.W. into Condamine R. at Warwick. *Min.Ref.* Clay deposit, *see* 1572.

Campsie Bore. *See under* Artesian Bores. No. 284.

Canadian Mine, California Cr. *Min.Ref.* Cassiterite, *see* 925.

—— Reef, Goldsmith Cr., Etheridge. *Min.Ref.* Gold, *see* 3738.

Canaga Estate Sub-artesian Bores. *See under* Artesian Bores. No. 89.

Canal Cr. Bore. *See under* Artesian Bores. No. 269.

Canal Cr. Goldfield—

SITUATION: *See maps,* Pls. 12, 13. The field is 28 miles W.byS. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. Centre about *Lat.* 28° 14′ S.; *Long.* 151° 40′ E.

DISCOVERY: In 1863.

AREA: 13,960 acres (nearly 22 square miles).

PROCLAMATION OF FIELD: First gazetted, 9th September, 1864; last, in 1868, as follows:—Commencing at the junction of the west branch of Canal Creek, and bounded by the west branch upwards about 10 chains to the road from Leyburn to Glenelg Station, thence by said road southerly about 2 miles; on the south by the watershed separating Canal Creek from the Macintyre Brook easterly to the head of Canal Creek; and on the east by Canal Creek northerly about 3 miles to the point of commencement.

MINERAL STATISTICS: *Included in* "Other Goldfields" *in tables and diagrams,* Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: **Gold** (alluvial), 3250; Manganese-dioxide, 6421.

GEOLOGICAL NOTE: The country consists of slates and other rocks of Gympie Formation (Permo-Carboniferous), covered in places by Walloon Coal Measures (Trias-Jura). The field has extensive gold-bearing alluvial deposits, but reefs are unknown.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 40 (1887), 120 (1898). *See under* Geol. Sur. Pub. List for title.

WARDEN: Stationed at Warwick.

INSPECTOR OF MINES: Stationed at Gympie.

Candle-light Cr., near Stanwell. *Min.Ref.* Gold (alluvial), *see* 3397.

Cania and Kroombit Goldfield—

Situation: *See maps,* Pls. 2, 3, 4, 5, and 34. 60 miles S.S.W. of Gladstone. *Cos.* Pelham and Rawbelle; *Dists.* Port Curtis and Burnett. Centre about *Lat.* 24° 43′ S.; *Long.* 150° 58′ E.

Discovery: In 1870.

Area: 54,720 acres (85½ square miles).

Proclamation of Field: First gazetted, 17th February, 1871; last, 8th November, 1905, as follows:—Commencing on the right bank of Three Moon Creek at an apple-tree marked broad-arrow over XXXV over TM in shield, about sixteen chains above the junction of Spring Creek, and bounded thence by that creek upwards to a point west of the north-west corner of portion 3v, parish of Clonmel; thence by a line across Three Moon Creek to the said north-west corner; thence by the north, west, and north boundaries of portion 3v aforesaid, east, north, and easterly to a point south of the south-east corner of portion 1v, parish of Cania; on the east by a line bearing north about four miles twenty-one chains to a point about sixty-six chains east of the south-east corner of portion 6v, parish of Cania; on the north by a line, the south boundary of the said portion 6v, and a line bearing west—eleven miles; on the west by a line bearing south eight miles; on the south by a line bearing east to the west boundary of portion 25, parish of Bingmann; thence by the boundaries of that portion in a general north-easterly and south-easterly direction to a point west of the point of commencement; and again on the south by a line bearing east to that point.

Mineral Statistics: *All included in* "Other Goldfields." *See tables,* Pls. 36, 46, 46a. *Also diagram,* Pl. 47.

Mineral References: **Gold,** *see* 4356, 4358; Copper (Azurite), 252; (Copper Carbonate), 1961; (Copper Pyrites), 2303-2306; (Cuprite), 2479; Tin (Cassiterite), 1175; Molybdenite, 6865; Zinc-Blende, 8205; Manganese-dioxide, 6480; Iron (Hematite), 4799; (Iron Pyrites), 5413, 5414; (Ironstone), 5626; (Limonite), 5916; (Magnetite), 6054; (Mispickel), 6802, 6803. Other Minerals: Limestone, 691; Calcite, 547; Halite, 7020; Opal (common), 6998.

Geological Note: The rocks on the Cania and Kroombit Goldfields comprise a series of alternating layers of sandstones, shale, and fossiliferous limestone, of probably Devonian Age. "Desert Sandstone," as high tablelands, also occurs in the locality. Quartz reefs in the slate country have been worked to a small extent, but alluvial deposits on the fields were worked exhaustively some years ago. *See* G.S.Q. Pub. No. 21, p. 8, for details.

Geological Publications: Reports Nos. 21 (1885), 48 (1888), 77 (1891). *See* Geol. Sur. Pub. List for titles. *See also* Supplementary List. No. 25.

Warden: Stationed at Gladstone.

Inspector of Mines: Stationed at Rockhampton.

Cania Downs Bore. *See under* Artesian Bores. No. 226.

Cania Road, 3½ miles S. of Kroombit. *Min.Ref.* Beauxite, *see* 290.

Canmaroo Stn., 24 miles S.E.byE. of Surat. *Min.Ref.* Opal (precious), *see* 6950.

Cannel Coal. *Var.* of Coal, *which see.*

Cannibal Creek, br. of Granite Cr., 15 miles S.E. of Maytown. *Lat.,* about 16° 10′-16° 15′ S.; *Long.,* about 142° 25′-145° 28′ E. *Min.Ref.* Cassiterite, *see* 835, 836; Galena, 2739; Limonite, 5838. *Ref.* A.R.D.M., p. 88, 1887.

Cannindah Stn. (New), nr. head of Cabbage Tree Cr., 59 miles N.N.W. of Gayndah Rail. Stn. *Min.Ref.* Copper Pyrites, *see* 2141; Iron Pyrites, 5021; Limestone, 629-631; Magnetite, 5984.

—— South Copper Mine. *See under* Gov. Mining Journal, Report No. 77.

Canning, Par. of (Sels. 5 and 7). Coal, *see* 1638.

Canning *Co.*; Moreton *Dist.* *See map,* Pl. 6.

—— Cr., 25 miles N. of Inglewood. *Min.Ref.* Coal, *see* 1628. *See also under* Gov. Mining Journal, Report No. 14.

—— Sel. (1176), par. of Noosa. *Min.Ref.* Coal, *see* 1828.

Canning Downs. Gold discovered here in traces in 1856.

—— Downs Sub-artesian Bores. *See under* Artesian Bores. No. 434.

Cannon Cr., Stanthorpe. *Min.Ref.* Amethyst, *see* 7168; Beryl, 293; Cairngorm, 7176; Cassiterite, 985; Diamond, 2575; Garnet, 3117; Hyacinth, 8233; Rock Crystal, 7189; Sapphire, 2348; Spinel, 7578; Topaz, 7793; Tourmaline, 7858; Zircon, 8233.

Cannonball Bore. *See under* Artesian Bores. No. 134.

Canobie Bores. *See under* Artesian Bores. No. 200. *Min.Ref.* Coal, *see* 1594A.

—— *Co.*; Burke *Dist.* *See map,* Pl. 20.

—— Stn., 85 miles N.N.E. of Cloncurry. *Min.Ref.* Chalcedony, *see* 1336A; Kaolin, 5670; Porcellanite, 5660A.

Canoona Goldfield—

Situation: *See maps,* Pls. 2, 3. The field is situated about 35 miles N.byW. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. Centre about *Lat.* 22° 58′ S.; *Long.* 150° 5′ E.

Discovery: The first discovery of gold (in payable quantities) in Queensland was made about 4 miles from Ramsay and Gaden's head station, Canoona, about the end of July, 1857, the prospectors being W. C. Chappel and party. *See* other notes in the "Geographic History of Queensland," by A. Meston, pp. 39, 40. By Auth. 1895.

Proclamation of Field: First (and only one) gazetted, 31st October, 1889, as follows:—Commencing at the junction of Canoona Creek with the Fitzroy River, and bounded thence by that creek upwards to the north corner of portion 1062, parish of Yaamba, by the eastern boundaries of portion 1062, a reserve, and portion 781 southerly; by a line east passing along the north boundary of portion 1974; by part of the west and north boundaries of portion 531; by the west and north boundaries of portion 629; by the west boundary of portion 572; by a line west to the east boundary of portion 660 on Pointer Range; by the eastern boundaries of portions 660, 925, and 1042; by the southern boundary of portion 1042 to its south-west corner; thence by the northern watershed of all tributaries falling into the Fitzroy River, north-westerly to the north-east corner of Princhester Lease under "*The Crown Lands Act of* 1884"; by the south-east boundary of that lease south-westerly to the confluence of Marlborough Creek with the Fitzroy River; and by that river downwards to the point of commencement;—exclusive of all alienated or selected lands.

Area: 124,800 acres = 195 sq. miles.

Mineral Statistics: *Included in* "Other Goldfields" *in tables and diagram,* Pls. 36, 46, 46A, 47.

Mineral References: **Gold** (alluvial), *see* 3391, 3392; (reef), 4315A-4315C; Silver, 7527A; Lead (Galena), 3058A; Copper (Copper Pyrites), 2295A; Chromite, 1479, 1480; Iron (Ilmenite), 4911; (Iron Pyrites) 5398A, 5398B; (Limonite), 5910; Zinc Blende, 8200A. Other Minerals: Chalcedony, 1361; Magnetite, 5956; Serpentine, 7391, 7392.

Geological Note: The country rock is exclusively serpentine, in which the gold is finely disseminated in belts or zones. Up to the end of 1860 gold to the value of £180,000 was taken out of alluvial deposits. Since that year Canoona has produced very little gold.

Geological Publications: Report—No. 31 (1886). *See under* Geol. Sur. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Rockhampton.

Canterbury Copper Mine, nr. Mount Perry. *Min.Ref.* Copper, *see* 1841A; Copper Pyrites, 2123B; Gold, 3584; Iron Pyrites, 4985; Limonite, 5828.

Canton Diggings, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4080.

—— Lead, Capeville, Cape R. Goldfield. *Min.Ref* Gold (alluvial), *see* 3272A.

—— Reef, Canton Diggings, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4080.

Canungra Cr., 10 miles E. of Beaudesert. *Min.Ref.* Tripolite, *see* 7032.

Capalaba (Par. of), 2½ miles S.S.W. of Cleveland. *Min.Ref.* Coal, *see* 1761; Gold, 4208, 4209. The coal measures belong to the Ipswich Series, the auriferous rocks to the Devonian System.

Cape Bedford, 16 miles N.N.E. of Cooktown. *Min.Ref.* Coal, *see* 1605.

—— Hillsborough, 18 miles N.W. of Mackay. *Min.Ref.* Agate, *see* 1379; Opal (common), 6980.

—— La Billardiere (Fergusson Is.), Brit. New Guinea. *Min.Ref.* Mineral Water, *see* 6574.

—— Goleburra Bore. *See under* Artesian Bores. No. 256.

Cape Moreton, 40 miles N.E. of Brisbane. *Lat.*, 27° 2′ S.; *Long.*, 153° 28′ E. *Min.Ref.* Coal, *see* 1768.

GEOLOGICAL NOTE: The rocks at the Cape comprise sandstones and shales belonging to the Walloon Formation (Trias-Jura). They have not been proved to contain seams of workable coal, although several bands of coal are known to exist in them.

Cape Possession, Brit. New Guinea. *Min.Ref.* Coralline Limestone, *see* 729.

Cape R. Goldfield—

SITUATION: *See maps*, Pls. 16, 17. The field is 66 miles (by rail) S.W.byW. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. Centre about *Lat.* 20° 31′ S.; *Long.* 114° 15′ E.

DISCOVERY: Rich deposits of gold were discovered at the beginning of October, 1868.

POPULATION: Included in Charters Towers returns for 1910.

PROCLAMATION OF FIELD: First gazetted, 4th September, 1867; last, 24th November, 1882, as follows:—Commencing on Granite Creek where it is intersected by the Queensland Northern Railway, and bounded thence by that creek upwards to its head in the range dividing Fletcher's Creek from the Cape River waters; by that range westerly to a point bearing north from Mount Richardson; on the west by a line bearing south to the watershed separating the Thomson River waters from those of the Cape River, and by that watershed easterly to the railway line, and by the railway line north-easterly to the point of commencement.

AREA: 197,120 acres (308 square miles).

PRINCIPAL MINING CENTRES: Lower Cape, Upper Cape, Pentland, Mt. Remarkable, Mt. Davenport, Mt. Richardson, *which see.*

MINERAL STATISTICS: Gold, included in Charters Towers. *See tables and diagram*, Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: **Gold** (alluvial) 3265-3272, (reef) 4045-4062; Silver, 7488, 7489; Lead (Cerussite), 1230; (Galena), 2946-2951; Copper (Copper Pyrites), 2236; Iron (Hematite), 4737, 4738; (Iron Pyrites), 5260-5269; (Ironstone), 5551-5554; (Limonite), 5878; (Mispickel), 6749. Other Minerals: Calcite, 504; Mica, 6560; Prase, 1401.

GEOLOGICAL NOTE: The country rocks are quartzite, mica schist, and hornblende schist in association with granite, felsite, and diorite; the felsite and diorite forming dykes in the granite, the latter intruding the schist. Gold-bearing quartz reefs and felspathic formations traverse both the schist and the granite. Desert Sandstone (Upper Cretaceous) forms a covering to the granite, etc., in places, and is well developed on the Main Range, and basalt forms the cap of Mt. Black, 9 miles W. of the field. Alluvial deposits containing gold occur at Pentland, but so far have not proved to be rich.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 73 (1891), and 99 (1894). *See under* Geol. Sur. Pub. List for title; *also under* Gov. Mining Journal, Reports Nos. 95, 102.

WARDEN and INSPECTOR OF MINES: Both stationed at Charters Towers.

REPORTS: Inspector's and Warden's, monthly (usually), in Q.G.M. Jour.; annually in A.R.D.M.

Cape Upstart, 40 miles N.W.byW. of Bowen. *Lat.*, 19° 42′ S.; *Long.*, 147° 40′ E. *See maps*, Pls. 16, 17. *Min.Ref.* Chiastolite, *see* 1415; Graphite, 4599.

GEOLOGICAL NOTE: The rocks at Cape Upstart consist of slates, schists, greywackes, &c., of undetermined age.

Cape York Peninsula. *Min.Ref.* Cassiterite, *see* 965, 972; Gold, 3243A, 3243B, 3660A, 3827A; Ironstone, 5527, 5535, 5536; Silver, 7468A, 7468B; Wolfram, 7982. *See also under* Q.G.M. Jour., Report No. 111.

—— —— ——. *See* map of Cape York Peninsula Gold and Mineral Fields. Ann. Rep. Dep. Mines, 1910.

Capella, W.byN. of Rockhampton, on Clermont Rail. *Lat.*, 23° 1′ S.; *Long.*, 148° 1′ E. *Min.Ref.* Coal, *see* 1697.

GEOLOGICAL NOTE: At Capella there are flows of basaltic and trachytic lavas close to outcrops of coal measures, marine sandstones, and limestones belonging to the Lower Bowen Formation (Permo-Carboniferous), apparently resting on granite. *See* G.S.Q. Pub. No. 107 for details and maps.

Capeville (Lower Cape), Cape R. Goldfield, W.S.W. of Charters Towers. *Lat.*, 20° 36′ S. *Long.*, 145° 23′ E. *See maps,* Pls. 16, 17. *Includes* Bluff Lead, Canton Lead, White Hill, Chinaman's Gully, Gahn's Gully, Red Hill, Milkonan's Point, situated between Rocky and Sandy Creeks and on the S. side of Sandy Cr. *Min.Ref.* Gold (alluvial), *see* 3265.

Capricornian Mine, Ulam Goldfield. *Min.Ref.* Galena, *see* 3053; Gold, 4300; Iron Pyrites, 5391.

Captain M.L., Cloncurry. *Min.Ref.* Azurite, *see* 165; Chrysocolla, 1498; Copper Pyrites, 2079; Malachite, 6116; Redruthite, 7223; Tile Ore, 2509.

—— P.C., Rockford, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4034.

—— Brown's Lease, Grass-tree Goldfield. *Min.Ref.* Gold, *see* 4111; Limonite, 5885.

—— Cook Reef, Woodville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3762; Mispickel, 6685.

—— —— ——, Palmer Goldfield. *Min.Ref.* Gold, *see* 3681.

—— Townley Mine, Mt. Hogan, Etheridge. *Min.Ref.* Gold, *see* 3792.

Carandotta Sub-artesian Bore. *See under* Artesian Bores. No. 256.

Carbine Cr., Diamantina R. *Min.Ref.* Gypsum, *see* 4617.

Carbon (C). *Atom.Wt.* = 12·0. *Sp.gr.* = 1·57 (amorphous); 3·55 (diamond).

MINERALS: *See* Asphaltum, Carbonaceous Shales, Coal, Diamond, Graphite, Kerosene Shale, Natural Charcoal, Oil-bearing Shales.

752. Carbonaceous Shale, Duaringa Bore, near Duaringa Rail. Stn., 66 miles (by rail) W.S.W. of Rockhampton. *Co.* Kimberley; *Dist.* Leichhardt. *Analysis:* Moisture = 2·76, Vol. Hydrocarbons = 29·2, Fixed Carbon = 4·86, Ash = 63·18 per cent. *Ref.* G.S.Q. Pub. 159, p. 16 (1901). Analyses show that some of the shale in this bore contains 31 gallons of crude oil to the ton.

752A. —— ——, beneath fireclay. *Loc.* Munduran Fire, Brick, Tile, and Pottery Co., about 19 miles N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.M.

Carbonates—of barium, *see* Witherite; of bismuth, *see* Bismutite; of copper, *see* Azurite, Malachite; of iron, *see* Siderite; of lime, *see* Aragonite, Calcite; of lime, magnesia, *see* Dolomite; of lime, magnesia, iron, *see* Ankerite; of lead, *see* Cerussite; of magnesia, *see* Magnesite; of manganese, *see* Rhodochrosite; of strontium, *see* Strontianite; of zinc, *see* Calamine; of zinc and copper, *see* Aurichalcite.

Carborough Cr., 10 miles W. of Nebo. About *Lat.* 21° 45′ S.; *Long.* 148° 20′ E. *Min.Ref.* Coal, *see* 1704.

Card (C. W.)—

GEOLOGICAL SURVEY PUBLICATION:

154. Bulletin No. 12. Oolitic Limestones from Lion Creek, Stanwell, near Rockhampton 1900

Cardigan Stn., 19 miles S.W. of Ravenswood. *Min.Ref.* Copper Ore, *see* 2037; Galena, 2954A; Massicot, 6538A.

—— Tin Syndicate's Mines, Thompson's Cr., S. of Watsonville. *Min.Ref.* Cassiterite, *see* 1143; Fluorspar, 2680.

Cardowan Run, Connor's R., S.byW. of Mackay. *Min.Ref.* Coal, *see* 1690A.

Cardwell, N.W.byN. of Townsville. *Lat.*, 18° 17′ S. *Long.*, 146° 3′ E. *See maps,* Pls. 16, 17. *Min.Ref.* Fayalite, *see* 2623.

GEOLOGICAL NOTE: The rocks of this part of the coast comprise slates and quartzites, etc. (of undetermined age). Granite occurs some miles away to the west. *See* G.S.Q. Pub. No. 217 (map).

—— *Co.*; Kennedy North *Dist.* *See map,* Pl. 16.

Carey's Mine, Mareeba Goldfield. *Min.Ref.* Gold, *see* 3776.

Cargoon Holding, Mt. Emu Plains Stn. *Min.Ref.* Gold, *see* 3561B; Massicot, 6521B.

Carlisle *Co.*; Kennedy South *Dist.* *See map,* Pl. 14.

Carter and Armstrong. Report on Queensland Silver-Lead Mines, Ltd., Lawn Hills. Q.G.M. Jour., vol. 2, p. 329 (1901).

Carlton Hills Run, N.W.byW. of Cloncurry. *Min.Ref.* Cuprite, *see* 2392c; Limonite, 5748c; Malachite, 6088a; Tile Ore, 2493a.

Carmichael Reef (Goody's), Norton Goldfield. *Min.Ref.* Galena, *see* 3049; Gold, 4277; Iron Pyrites, 5376; Mispickel, 6792; Redruthite, 7302; Silver, 7524; Zinc-Blende, 8194.

Carmilla, Carmilla Cr., St. Lawrence. *Min.Ref.* Anglesite, *see* 63; Cerussite, 1300; Galena, 3064, 3065; Gold, 4346; Silver Ore, 7566.

Geological Note: The rocks about this mining locality comprise granite, shale, slate, sandstone, and felsite. The sedimentary rocks are of Gympie Formation (Permo-Carboniferous), and the felsite in the form of dykes, intersect both the granite and the sedimentaries. On the side of a dyke of felsite there is a very large quartz reef, containing gold, but of too low a grade to be profitably worked. *See* G.S.Q. Pub. No. 141 for details and map.

Carnarvon *Co.*; Darling Downs *Dist.* *See map,* Pl. 12.

Carnelian. *Var.* of Chalcedony, *which see.* Quantities of Carnelian, assoc.with Agates, occur at the Percy River near Gilberton, and at the Little River near Croydon.

Carney's Cr., Coochin Coochin, 3 miles S. of Biggenden. *Min.Ref.* Ilmenite, *see* 4910; Garnet, 3138a.

Caroline Mine, Charters Towers. *Min.Ref.* Gold, *see* 3892.

Carpentaria *Co.*; Burke *Dist.* *See map,* Pl. 20.

—— Reef, Golden Valley, Croydon. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

Carpentaria Shire Council's Bore. *See under* Artesian Bores. No. 116.

Carpenters' Gully Tin Mine, nr. Severn R., Stanthorpe. *Min.Ref.* Wolfram, *see* 7995.

Carrara Stn., 10 miles S.W. of Gladstone. *Min.Ref.* Marble, *see* 591.

Carrington Bismuth Mine, Sellheim Mineral Field. *Min.Ref.* Bismuthinite, *see* 373; Bismutite, 406; Gold, 4145.

Carrington Goldfield—

Situation: *See maps,* Pls. 16, 17. The township of Liontown is 20 miles S.S.W. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. Centre about *Lat.* 20° 50′ S.; *Long.* 146° 5′ E.

Discovery: In 1905.

Population: Included in Charters Towers Goldfield return for 1910.

Proclamation of Field: First gazetted, 28th February, 1905; last, 13th October, 1909, as follows:—Commencing at the intersection of the north boundary of Nelson No. 1 Block with the right bank of Oaky Creek, and bounded thence by the north of that block easterly to the south-east corner of Windsor No. 2 Block; thence northerly to the north-east corner of that block; by the north of the same block westerly to Oaky Creek; by that creek downwards to the point of commencement.

Area: 3,940 acres (6 1/6 square miles).

Mineral Statistics: *Included in* "Other Goldfields" *in tables and diagrams,* Pls. 36, 46, 46a, 47.

Mineral References: Gold, *see* 3880.

Geological Publications: None issued.

Warden and Inspector of Mines: Both stationed at Charters Towers.

Smelting Works: *See under* Smelting Works in Queensland.

Carrington's Lion 1 and 2 E. Lease, Charters Towers Goldfield. *Min.Ref.* Copper Pyrites, *see* 2217; Galena, 2875; Gold, 3893; Iron Pyrites, 5156; Zinc-Blende, 8119.

—— United Mines, Ltd., Lease, Charters Towers Goldfield. *Min.Ref.* Barytes, *see* 272; Copper Pyrites, 2218; Galena, 2876; Gold, 3894; Iron Pyrites, 5157; Zinc-Blende, 8120.

—— Sel. (32), Coomera R. *Min.Ref.* Gold, *see* 4227; Graphite, 4604.

Carron Mining Centre, Croydon Goldfield. *Reefs*—Blue Jacket, Vanderbilt, Gilded Rose, Jumbo, Sarina Gem, and others.

MINERAL REFERENCES: Galena, *see* 2697A, 2697B; Gold, 3477-3481; Iron Pyrites, 4933-4935.

Carruther's *Co.*; Gregory South *Dist.* *See map,* Pl. 18.

Carter's Bores. *See under* Artesian Bores. Nos. 205, 217.

—— (Nonda Downs) Bores. *See under* Artesian Bores. No. 330.

Casey's (Newstead) Bore. *See under* Artesian Bores. No. 295.

Cashmere Bores. *See under* Artesian Bores. No. 202.

Cassady's Grazing Farm Bore. *See under* Artesian Bores. No. 380.

Cassilis *Co.*; Maranoa *Dist.* *See map,* Pl. 12.

—— Run Bores. *See under* Artesian Bores. No. 203.

Cassiterite. *Syn.*, Tinstone, Tin Ore. *Compo.*, Oxide of Tin. *Colour,* usually brown or black. *Lustre,* Adamantine. *Streak,* usually greyish, also whitish and brownish. Brittle. *H.* = 6·7. *Sp.gr.* = 6·4-7. *Contents* (*max.*), Tin 78 per cent.

753. ——. In alluvial deposits. *Loc.* Alluvial Springs, 5 miles N.W. of Black Springs, 3 miles from Bucket Gap, about 19 miles S.E. of **Croydon,** Stanhills Tin Field. *Co.* Esmeralda; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 211, p. 11 (1907).

754. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Black Springs Waterhole, on Locket Cr., about 20 miles S.E. of Croydon, **Stanhills Tin Field** (*ante*). *Ref.* G.S.Q. Pub. 211, p. 11 (1907).

755. ——. *Loc.* Road to the Springs, nr. Koh-i-noor Tin Mine, Stanhills Tin Field, about 32 miles S.E. of Croydon. *Co.* Esmeralda; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, p. 8 (1907).

756. ——. *Assoc.with* Copper, Pyrites, Iron Pyrites, Galena, and Zinc-Blende, in chlorite, quartz, and greisen. *Loc.* Brilliant P.O. Mine, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 6 (1907).

757. ——. In chlorite and aplite lode. *Loc.* Brilliant No. 1 Claim, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 6 (1907).

758. ——. In alluvial deposits. *Loc.* nr. Brilliant Mines, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 10 (1907).

759. ——. In chloritic lode. Furbur and White's Claim, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 8 (1907).

760. ——. *Assoc.with* Galena, in granite and chlorite. *Loc.* Ivanhoe Mine (Brilliant North Lease), Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 7 (1907).

761. ——. In quartz vein. *Loc.* Koh-i-noor Mine, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 8 (1907).

761A. ——. *Loc.* Mt. Cassiterite, Stanhills Tin Field (*ante*). *Ref.* Q.G.M. Jour., vol. 9, p. 456 (1908).

761B. ——. *Loc.* Mt. Simpson, Stanhills Tin Field (*ante*). *Ref.* Q.G.M. Jour., vol. 9, p. 456 (1908).

762. ——. *Assoc.with* Graphite, in chloritic and felsitic formation. *Loc.* New Chum Mine (Brilliant North Lease), Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, pp. 7 and 8 (1907).

763. ——. In lode of chlorite, quartz, and greisen. Wheeler's Claim, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 10 (1907).

764. ——. In greisen. Flanagan's Claim, Mistake Cr., about 20 miles S.E. of Croydon, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 10 (1907).

765. ——. *Assoc.with* Copper Pyrites, Azurite, Malachite, Galena, and Zinc-Blende, in chlorite. *Loc.* Comet Mines, N. of Ten-mile Cr., nr. Esmeralda Road, about 30 miles S.E. of Croydon, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

766. ——. *Assoc.with* Chlorite, in granite and greisen. *Loc.* Douglas Tin Mine, Ten-mile Cr., about 26 miles S.E. of Croydon, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

767. ——. In felsitic formation. Foley's Mine, junction of Rocky Cr., Ten-mile Cr., about 29 miles S.E. of Croydon, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

768. Cassiterite. In chlorite and greisen lode. *Loc.* Kellaway's Tin Claim, Ten-mile Cr., about 26 miles S.E. of Croydon, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

769. ——. In chlorite and quartzite. *Loc.* Miner's Punch Workings, N. side of Ten-mile Cr., about 30 miles S.E. of Croydon, Stanhills Tin Field (*ante*). *Ref.* G.S.Q. Pub. 211, p. 8 (1907).

770. ——. *Assoc.with* Wolfram and Molybdenite, in small quartz leader in quartz felsite. *Loc.* Right-hand br. Ten-mile Cr., 12 to 24 miles S.E. of Croydon, Stanhills Tin Field (*ante*). *Ref.* B.D.

771. ——. In alluvial deposits, Spring Cr., 40 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* P.R.S.Q., vol. 4 (1887).

772. ——. *Loc.* Rocky Cr., Boondooma, *viâ* Jimbour, 30 miles N. of Dalby. *Co.* Boondooma; *Dist.* **Burnett.** *Ref.* B.D.

773. ——. May Queen Mine, Brovinia Diggings, 92 miles (by coach) N.N.E. of Chinchilla Rail. Stn. (Western line). *Co.* Newcastle; *Dist.* Burnett. *Assay:* Metallic Tin = 74·20 per cent. *Ref.* A.R. 1907, p. 108.

773A. ——. *Assoc.with* Ilmenite, Rutile, Topaz, Zircon, and Amethyst, in alluvial deposits. *Loc.* P.C. Workings, Rocky Cr., 5 miles above Brovinia Cr., br. Cadarga Cr., 35½ miles S.S.W. of Gayndah, 60 miles (by road) *viâ* Cooranga Head Station. *Co.* Newcastle; *Dist.* Burnett. *Ref.* Q.G.M.J., vol. 5, p. 62 (1904).

774. ——. *Assoc.with* Tourmaline. *Loc.* Stockman Reef, Eidsvold Goldfield, 37 miles W.S.W. of Mt. Perry Rail. Stn., 40 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 43, pp. 3, 4 (1887).

775. ——. In alluvial deposits. Tin Cr., eastern head of Archer R., 20 miles E.byS. of Mein Telegraph Stn., 36 miles N.W.byN. of Coen, Archer R. Tinfield. *Co.* Archer; *Dist.* **Cook.** *Ref.* A.R.D.M. 1907, p. 47.

776. ——. In alluvial deposits. *Loc.* Mahoney and Sullivan's Claim, Baird's and Kimberley Creeks, nr. Romeo Cr., 20 miles S. of Cooktown, **Annan R. Tinfield.** *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 20, p. 19 (1907).

777. ——. In alluvial deposits. Wilson and Muir's Claim, Baird's and Kimberley Creeks, Romeo (*ante*). *Ref.* G.S.Q. Pub. 210, p. 19 (1907).

778. ——. *Assoc.with* Tourmaline. *Loc.* Wheal Davey Tin Lease (58), S.E. of Mt. Leswell, 1½ miles W.S.W. of Rossville, 26 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 66, p. 3 (1891).

779. ——. *Assoc.with* Tourmaline, in quartz. *Loc.* Southern Cross Lode, ¼ mile below Clunn's Falls, 20 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 91, p. 5 (1893).

780. ——. In alluvial deposits. Grass-tree Cr., 20 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 210, p. 20 (1907).

781. ——. In alluvial deposits Byer's Gully, E. side of Mt. Leswell, 20 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

782. ——. *Assoc.with* Mispickel and Tourmaline, in quartz lode. *Loc.* Cahill Bros.' Lease (89), Jones's Cr., trib. of Wallaby Cr., nr. Rossville, 26 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

783. ——. *Assoc.with* Iron Pyrites, Mispickel, and Tourmaline, in quartz, aplite, and granite. *Loc.* Collingwood Tin Lease (176), Jones's Cr., trib. of Wallaby Cr., nr. Rossville (*ante*). *Ref.* G.S.Q. Pubs. 66, p. 4 (1891), and 210, p. 15 (1907).

784. ——. *Assoc.with* Tourmaline, Mispickel, and Chlorite, in quartz lode. *Loc.* Dodd's Tin Mine, head of Byer's Gully, trib. of Jones's Creek, nr. Rossville (*ante*). *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

785. ——. In alluvial deposits. Jones's Cr., E. side of Mt. Leswell, nr. Rossville (*ante*). *Ref.* G.S.Q. Pub. 66, p. 7 (1891).

786. ——. *Assoc.with* Tourmaline, in felspar. *Loc.* Richmond Tin Mine, Jones's Creek, S.E. of Collingwood Lease, nr. Rossville (*ante*) *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

787. ——. In alluvial deposits Kerr Bros.' Claim, between Jones's and Byer's Creeks, nr. Rossville (*ante*). *Ref.* G.S.Q. Pub. 210, p. 24 (1907).

788. ——. In alluvial deposits. Yateman's Claim, between Jones's and Byer's Creeks, nr. Rossville (*ante*). *Ref.* G.S.Q. Pub. 210, p. 24 (1907).

789. ——. In alluvial deposits. Jackeroo Cr. Tin Workings, about 33 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 210, pp. 20, 21 (1907).

790. ——. *Assoc.with* Tourmaline, in quartz lode. *Loc.* Creighton's Tin Mine, Mt. Amos, about 20 miles S.S.E. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pubs. 66, p. 9 (1891), and 210, p. 26 (1907).

791 ——. *Assoc.with* Tourmaline, in quartz lode. *Loc.* Fiery Star Tin Mine, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub 66, p. 8 (1891).

792. ——. *Assoc.with* Tourmaline, Mispickel, and Wolfram, in talc and quartz. *Loc.* Gladstone Tin Mine, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub. 66, p. 9 (1891).

793. ——. *Assoc.with* Iron Pyrites, in tourmaline and quartz. *Loc.* Keating, Madden, and Co.'s Tin Lease, Mt. Amos (*ante*). *Assay:* (1) Metallic Tin = 48½ per cent. (2) Metallic Tin = 30 per cent. *Ref.* G.S.Q. Pub. 35, p. 15 (1887).

794. ——. *Assoc.with* Tourmaline, in quartz. *Loc.* Lake's Original Opening, below Fiery Star Level, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub. 66, p. 8 (1891).

794A.——. *Assoc.with* Wolfram, Mispickel, Tourmaline, and Talc, in quartz. *Loc.* Mt. Amos Tin Mine, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub. 35, p. 15 (1887).

795. ——. In alluvial deposits. Mt. Amos (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 15 (1887), 66, p. 7 (1891), and 210, p. 26 (1907).

796. ——. *Assoc.with* Tourmaline in talc, kaolin, and quartz. *Loc.* Mt. Browning Tin Mines, Mt. Amos (*ante*). *Assays:* Metallic Tin = 10·9, 4·1, 15·2, 19·8, 18·4, 36·3 per cent. *Ref.* G.S.Q. Pub. 66, p. 8 (1891).

797. ——. *Assoc.with* Tourmaline, in quartz lode. *Loc.* Murray and McArdle Tin Mines, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub. 66, p. 9 (1891).

798. ——. *Assoc.with* Ruby Tin, Tourmaline, Talc, Orthoclase, in quartz. *Loc.* Owen and Davidson's Lease, Mt. Amos (*ante*). *Assays:* Metallic Tin = from 38 to 61 per cent. *Ref.* G.S.Q. Pub. 35, p. 15 (1887).

798A.——. *Assoc.with* Tourmaline and Quartz, in granite. *Loc.* Phœnician Lease (189), Mt. Browning Lodes, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub. 210, pp. 16, 17 (1907).

799. ——. *Assoc.with* Tourmaline, in quartz lode. *Loc.* Sullivan and party's Tin Claim, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub. 35, p. 15 (1887).

800. ——. *Assoc.with* Tourmaline, in lode. *Loc.* Mt. Harbord Tin Mine, between Baird's and Jones's Cr., Mt. Leswell, 1½ mile W.S.W. of Rossville, 26 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 66, p. 4 (1891).

801. ——. *Assoc.with* Tourmaline, Mispickel, Wolfram, and Felspar, in quartz lode. *Loc.* Wright's Lease (99), Black Prince Lode, Mt. Hartley, about 4½ miles E.byS. of Rossville, 26 miles S.S.E. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 7 (1891).

802. ——. In talcose rock. Caledonia Tin Claim, Mt. Hartley (*ante*). *Ref.* G.S.Q. Pub. 66, p. 7 (1891).

803. ——. In alluvial deposits. Granite Cr., nr. Mt. Hartley (*ante*). *Ref.* L.B. 1, p. 929 (1887).

804. ——. In alluvial deposits. On both sides of Mt. Hartley (*ante*). *Ref.* G.S.Q. Pub. 66, p. 7 (1891).

805. ——. *Assoc.with* Tourmaline, in quartz lode. *Loc.* Mt. Leswell Leases (22, 28, 51, 52), between Baird's Cr. and Jones's Cr., 1½ mile W.S.W. of Rossville and about 26 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Assay:* Metallic Tin = 21·7 per cent. *Ref.* G.S.Q. Pubs. 66, pp. 1 and 3 (1891), and 120, p. 15 (1907).

806. ——. In alluvial deposits. Annan R. Company's Hydraulic Sluicing Workings, head of Baird's Cr., Mt. Leswell Leases (*ante*). *Ref.* G.S.Q. Pub. 210, p. 23 (1907).

807. ——. *Assoc.with* Tourmaline, in alluvial deposits. *Loc.* Tin Mines, Mt. Romeo, 5 miles S.S.W. of Rossville, 28 miles S. of Cooktown. *Co.* Bank; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 35, p. 16 (1887), and 210, p. 21 (1907).

808. ——. In alluvial deposits. Finnegan's Tin Claim, Mt. Romeo (*ante*). *Ref.* G.S.Q. Pub. 210, pp. 21 and 22 (1907).

809. ——. *Assoc.with* Tourmaline, Felspar, and Iron Pyrites, in quartz lode. *Loc.* Lease No. 96, Mulligan's Gully, trib. of Jones's Cr., E. of Mt. Leswell, 1 mile S. of Rossville, 26 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 66, p. 5 (1891), and G.S.M.

810. ——. *Assoc.with* Tourmaline, in porphyry. *Loc.* Lion's Den Tin Mines, Mungumby Cr., about 24 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Assays:* Metallic Tin = 5·4 per cent., 11·4 per cent., 10·78 per cent. *Ref.* G.S.Q. Pub. 66, p. 6 (1891).

811. Cassiterite. In alluvial workings. *Loc.* nr. Lion's Den Tin Mines, Mungumby Cr. (*ante*). *Ref.* G.S.Q. Pub. 66, p. 7 (1891).

812. ——. *Assoc.with* Wolfram, in alluvial deposits. *Loc.* Tableland Tin Claim, Lion's Den Mines, Mungumby Cr. (*ante*). *Ref.* G.S.Q. Pub. 210, p. 26 (1907), and G.S.M.

813. ——. In alluvial deposits. Shipton's Tin Claim, Parrot Cr., nr. Mt. Walker, 3½ miles S. of Rossville, about 28 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 210, p. 22 (1907).

814. ——. In alluvial deposits. Spargo's Tin Claim, Parrot Cr., nr. Mt. Walker, 3½ miles S. of Rossville (*ante*). *Ref.* G.S.Q. Pub. 210, p. 22 (1907).

815. ——. In alluvial deposits. Romeo Cr., below the falls at Romeo, about 7 miles S. of Rossville, and 33 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 210, p. 20 (1907).

816. ——. In alluvial deposits. Yates's Tin Claim, Romeo R., Upper Annan, 7½ miles S. of Rossville (*ante*). *Ref.* G.S.Q. Pub. 210, p. 18 (1907).

817. ——. In alluvial deposits. Tin Mines, Wallaby Cr., Rossville, 25 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 35, p. 16 (1887), and 210, pp. 23-25 (1907).

818. ——. In alluvial deposits. *Loc.* Dick and Coutt's Claim, 3 miles from Rossville Cr., near Rossville (*ante*). *Ref.* G.S.Q. Pub. 210, p. 25 (1907).

819. ——. *Assoc.with* Tourmaline, Mispickel, Felspar, and Mica, in decomposed rock. *Loc.* Harris and Party's Tin Claim, Wallaby Cr., Rossville (*ante*). *Ref.* G.S.Q. Pub. 35, p. 16 (1887).

820. ——. In alluvial deposits. Hatfield's Tin Claim, junction of Jones's and Wallaby Cr., Rossville (*ante*). *Ref.* G.S.Q. Pub. 210, p. 24 (1907).

821. ——. In alluvial deposits. Home Rule Tin Claim, Wallaby Cr., Rossville (*ante*). *Ref.* G.S.Q. Pub. 210, p. 25 (1907).

822. ——. In chloritic rock. Johnston and Party's Tin Mine, Wallaby Cr., Rossville (*ante*). *Ref.* G.S.Q. Pub. 35, p. 16 (1887).

823. ——. *Assoc.with* Tourmaline, in alluvial deposits. *Loc.* Native Youth Tin Mine, junction of Jones's Cr. with Wallaby Cr., Rossville (*ante*). *Yield:* Tin = 70·8 per cent. *Ref.* G.S.Q. Pub. 91, p. 5 (1893), and p. 210, p. 23 (1907).

824. ——. In alluvial deposits. *Loc.* Stoney Cr., 6 miles S. of Rossville, about 31 miles S. of Cooktown. Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 210, p. 21 (1907).

825. ——. In alluvial deposits. Brisbane Claim, Trevethan Cr., about 23 miles S.S.E. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* A.R., p. 170 (1908).

826. ——. In alluvial deposits. Hit-or-Miss Claim, Trevethan Cr. (*ante*). *Ref.* A.R., p. 170 (1908).

827. ——. In alluvial deposits. Archbold's Tin Claim, Waterfall Cr., about 20 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 210, p. 26 (1907).

828. ——. In alluvial deposits. China Camp, nr. Bloomfield R., 3 miles S. of Cape Tribulation, about 42 miles S. of Cooktown. *Co.* Banks (*ante*). *Ref.* G.S.Q. Pub. 150, p. 11 (1900).

829. ——. In alluvial deposits. Mt. Windsor, nr. head of the Palmer R., about 57 miles N.W. of Port Douglas. *Co.* Banks (*ante*). *Ref.* A.R.D.M., 1892, p. 98.

830. ——. In altered greywacke. Admiral Tin Claim, Arbouin, 18 miles W. of Mungana Rail. Stn. (Chillagoe line), **Walsh and Tinaroo Mineral Fields.** *Co.* Bolwarra; *Dist.* Cook. *Ref.* G.S.M.

830A. ——. In alluvial deposits. Fulford Cr., br. of Lynd R., about 20 miles S.W. of Fisherton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* A.R., p. 317 (1911).

831. ——. *Assoc.with* Wolfram, Native Bismuth, Bismutite, Molybdenite, and Scheelite, with traces of Copper Pyrites, in quartz, chlorite, and muscovite, *Loc.* Pinnacle Cr., br. of Lynd R., 16 miles W. of Fossilbrook, 50 miles S.W. of Almaden (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

832. ——. *Assoc.with* Wolfram and Molybdenite, in quartz, chlorite, and muscovite. *Loc.* Tableland, head of Dixon's Cr., br. of Lynd R., 30 miles W. of Fossilbrook, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

833. ——. *Assoc.with* Wolfram and Molybdenite, in quartz and muscovite. *Loc.* Spring Cr., br. of Blackfellow's Cr., trib. of Lynd R., 12 miles W. of Fossilbrook, 45 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

834. ——. Head of Campbell's Cr., Maytown, 36 miles S. of Laura Rail. Stn., 103 miles (by rail and road) S.byW. of Cooktown. *Co.* Chelmsford; *Dist.* Cook. *Ref.* O.R.

835. ——. Cannibal Cr. Tin Mine, Mt. Hurford, 15 miles S.E. of Maytown. *Co.* Chelmsford (*ante*). *Ref.* A.R.D.M., 1887, p. 88.

836. ——. Phoenix Tin Mine, Cannibal Cr. (Spring Cr.), Mt. Hurford (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

837. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Granite Cr., 9 miles E.byS. of Maytown. *Co.* Chelmsford; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 35 (1887).

838. ——. In alluvial deposits. Mt. Alto, right bank of Mitchell R., 40 miles S.W. of Port Douglas. *Co.* Dagmar; *Dist.* Cook. *Ref.* A.R.D.M., 1892, p. 98.

839. ——. *Assoc.with* Wolfram, Molybdenite, Scheelite, and Tungstite, with traces of Tenorite, Malachite, Chrysocolla, and Iron Pyrites, etc., in defined quartz lodes, in slates. *Loc.* Mt. Carbine, 11 miles W. of Port Douglas, 34 miles (*viâ* Mt. Molloy) N.N.W. of Biboohra Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Dagmar (*ante*). *Ref.* B.D.

840. ——. *Assoc.with* Tourmaline and Garnet, in alluvial deposits. *Loc.* Bakerville Mine, 5 miles S.W. of Stannary Hills (br. of Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 42 (1897).

841. ——. In felspathic lode. Last Kick Tin Mine, Bakerville, 4 miles W. of Watsonville, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson (*ante*). *Ref.* G.S.Q. Pub. 119, p. 25 (1897).

842. ——. *Assoc.with* Ironstone and Manganese-dioxide, in quartzite. *Loc.* Tourmaline United Mine, Bakerville (*ante*). *Ref.* G.S.Q. Pub. 119, p. 27 (1897).

843. ——. *Assoc.with* Wolfram, Molybdenite, Bismuth (native), Bismutite, Mispickel, and Scorodite, with traces of Copper Pyrites, Cuprite, Tenorite, Malachite, Azurite, Iron Pyrites, Hematite, etc., in irregular masses of quartz and greisen, in granite. *Loc.* Boonmoo, 81 miles (by rail) S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

844. ——. *Assoc.with* Turgite and Chlorite, in lode. *Loc.* Black Rock Extd. Mine, Eureka Cr., nr. Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Field (*ante*). *Ref.* G.S.Q. Pub. 125, p. 39 (1897).

845. ——. *Assoc.with* Azurite and Malachite. *Loc.* Clan Ronald Tin Mine, Eureka Cr. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887), and G.S.Q. Pub. 125, p. 47 (1897).

846. ——. *Assoc.with* Chlorite, in lode. *Loc.* Eclipse Mine, Eureka Cr. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 45 (1897).

847. ——. *Assoc.with* Copper Carbonate, in lode. Eureka Cr. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 40 (1897).

848. ——. *Assoc.with* Chalcolite, and traces of Pitchblende. *Loc.* Gladstone Tin Mine, Eureka Creek (*ante*). *Ref.* B.D.

849. ——. *Assoc.with* Fluorspar, in lode. *Loc.* Gladstone Tin Mine, Eureka Cr. (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 54 (1900).

850. ——. In Kaolin. Great Eastern Tin Mine, Eureka Cr. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

851. ——. In lode. Joss's Rush, Eureka Cr. (*ante*). *Ref.* G.S.M.

852. ——. *Assoc.with* Fluorspar. *Loc.* Lass o' Gowrie Mine, Eureka Cr. (*ante*).

853. ——. *Assoc.with* Wolfram. Rose of England Mine, Eureka Cr. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

854. ——. In chloritic shales. Stannary Hills Tin Mines, Eureka Cr. (*ante*). *Ref.* G.S.Q. Pubs. 146, pp. 1 anl 2 (1900), and 192, p. 25 (1904).

855. ——. In quartz and felspar, in micaceous rock. Galtmore, Walsh R., nr. Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 41 (1897), and G.S.M.

856. ——. Oberlin Mine, Glen Linedale, 6 miles N.W. of Coolgarra, 11 miles N. of Mt. Garnet Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 41 (1897).

857. Cassiterite. In quartz lode. Specimen Mine, Glen Linedale (*ante*). *Ref.* G.S.Q. Pub. 125, p. 40 (1897).

858. ——, in quartz stained with copper. *Loc.* Columbia Mine, Irvinebank, 12 miles W.S.W. of Herberton, 10 miles S.W. of Stannary Hills, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

859. ——. *Assoc.with* Turgite. *Loc.* Comet Tin Mine, Irvinebank (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

860. ——. *Assoc.with* Fluorspar. *Loc.* Crœsus Tin Mine, Irvinebank (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

861. ——. *Assoc.with* Tourmaline. *Loc.* Day Dawn Tin Mine, Irvinebank (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

862. ——. *Assoc.with* Galena, in quartz. *Loc.* Freethinker Tin Claim, Irvinebank (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

863. ——. *Assoc.with* Bismuthinite, in chlorite. *Loc.* Gt. Southern Mine, Irvinebank (*ante*). *Ref.* G.S.Q. Pub. 25, p. 47 (1897).

864. ——, in lode. *Loc.* Halpin's Camp, Irvinebank (*ante*). *Ref.* B.D.

865. ——. *Assoc.with* Kaolin, in lode. *Loc.* Jester Mine, Irvinebank (*ante*). *Ref.* G.S.M.

866. ——. Mt. Agnes, Irvinebank (*ante*). *Ref.* G.S.Q. Pub. 125, p. 50 (1897).

867. ——. *Assoc.with* Bismuthinite, in quartz. *Loc.* North Britain Mine, Irvinebank (*ante*). *Ref.* G.S.M.

868. ——, in lode, Pandora Tin Mine, Irvinebank (*ante*). *Ref.* G.S.Q. Pub. 192, p. 24 (1904).

869. ——, in lode. Red King Tin Mine, Irvinebank (*ante*). *Ref.* G.S.Q. Pub. 192, p. 23 (1904).

870. ——, as a lode deposit. Royal Standard Mine, Irvinebank (*ante*). *Ref.* G.S.M.

871. ——. *Assoc.with* Bismuthinite. *Loc.* Southern Tin Mine, Irvinebank (*ante*). *Ref.* G.S.M.

872. ——, as a lode deposit. Star of the South Tin Mine, Irvinebank (*ante*). *Ref.* G.S.M.

873. ——, as a lode deposit. Tornado Mine, Irvinebank (*ante*). *Ref.* G.S.Q. Pub. 192, p. 23 (1904), and G.S.M.

874. ——. *Assoc.with* Native Bismuth, in chlorite. *Loc.* Vulcan Tin Mine, Irvinebank (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 54 (1900).

875. ——. In lode. *Loc.* Adventure Tin Mine, 3 miles S. of Montalbion, 10 miles S.byW. of Stannary Hills Rail. Stn. (Chillagoe-Stannary Hills br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 192, p. 24 (1904).

876. ——. *Assoc.with* Copper Pyrites, Mispickel, and Zinc-Blende, in lode. *Loc.* Consolidated Tin Mine, 4 miles N.E. of Montalbion, 5 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 119, p. 34 (1897).

877. ——. *Assoc.with* Chlorite, Mica, and Rock Crystal, in quartz lode. *Loc.* Just-in-time Tin Mine, on hill nr. Ragged Cr., 7 miles S. of Montalbion, 14 miles S.byW. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 119, p. 33 (1897).

878. ——. In kaolin. Tornado Silver Mine, Silverfield, 1 mile S.byW. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

879. ——. In chloritic rock. *Loc.* Maud and Mary Tin Mine, Walsh R., nr. Herberton, Walsh and Tinaroo Mineral Fields (*ante*). Black Tin Contents = 18 per cent. *Ref.* G.S.Q. Pub. 125, p. 42 (1897).

880. ——. In quartz. *Loc.* Anna Parnell Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles S.E.byE. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 25 (1883).

881. ——. *Assoc.with* Copper (native), Copper Carbonate, and Wolfram, in lode. *Loc.* Argyll Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 25 (1883).

882. ——. *Assoc.with* Garnet and Tourmaline, in porphyry. *Loc.* Baal Gammon Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 119, p. 12 (1897), and G.S.M.

883. ——. *Assoc.with* Garnet, in lode. *Loc.* Baker's 4-Mile Tin Mine, Watsonville (*ante*). *Ref.* G.S.M.

884. ——, in dioritic rock. *Loc.* Bar of Soap Mine, Watsonville (*ante*) . *Ref.* G.S.M.

885. ——. *Assoc.with* Mica, in felsitic rock and quartz. *Loc.* Ben Lomond Mine, Watsonville (*ante*). *Ref.* G.S.M.

886. ——. Bismarck Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 125, p. 40 (1897).

887. ——. *Assoc.with* Garnet, in chlorite. *Loc.* Boulton's Folly Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 26 (1883).

888. ——. *Assoc.with* Felspar, in quartz lode. *Loc.* Boundary Tin Mine, Watsonville (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 13, p. 28 (1883).

889. —— *Assoc.with* Copper Ore, in quartz, in porphyry and diorite. *Loc.* Caledonia Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 28 (1883), 119, p. 18, (1897), and 125, p. 40 (1897).

890. ——. *Assoc.with* Wolfram, Scheelite, Mispickel, Iron Pyrites, and Copper Carbonate, in dioritic dyke. *Loc.* Chance Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 119, p. 18 (1897), and 125, p. 40 (1897).

891. ——. *Assoc.with* Steatite and Serpentine, in quartzite. *Loc.* Come-by-Chance Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 22 (1883).

892. ——. *Assoc.with* Copper Pyrites, Copper Oxide, Azurite, and Malachite, in greywacke and slate. *Loc.* Crucible Tin and Copper Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, pp. 21, 22 (1883).

893. ——. In kaolin, chlorite, and ironstone. Day Dawn Tin Mine, Watsonville (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 13, p. 24 (1883).

894. ——. *Assoc.with* Garnet, Wolfram, and Felspar, in quartz. *Loc.* Dreadnought Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 26 (1883).

895. —— (crystals). Easter Monday Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 125, p. 33 (1897).

896. ——. *Loc.* Excelsior and Watson's Folly Amalgamated Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 25 (1883).

897. ——. *Assoc.with* Ironstone and Siderite, in quartzite and kaolin. *Loc.* Federation Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 119, p. 24 (1897), and G.S.M.

898. ——. *Assoc.with* Fluorspar, Iron Pyrites, Wolfram, Chalcanthite, and Chlorite, in quartzite and felspar, in dyke. *Loc.* Glencairn Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 23 (1883), and 125, p. 40 (1897).

899. ——. *Assoc.with* Steatite, Serpentine, and Copper, in greywacke and clay shales. *Loc.* Good Friday Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 21 (1883), and P.R.S.Q., vol. 15, p. 64 (1887).

900. ——. In soft ferruginous rock, with quartz and in greywacke. *Loc.* Grand Secret Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 21 (1883).

901. ——. *Assoc.with* Copper Pyrites, Mispickel, and Orthoclase, in porphyry. *Loc.* Great Western Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 27 (1883).

902. ——. *Assoc.with* Iron Pyrites and Galena. *Loc.* Great Wheal Busy Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 125, p. 46 (1897).

903. ——. *Assoc.with* Native Bismuth, in chlorite and porphyry. *Loc.* Herbertina Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

904. ——. *Assoc.with* Tile Ore, Azurite, Malachite, and Ochre, in quartz lode. *Loc.* Ironclad Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 21 (1883), 119, p. 9 (1897), and P.R.S.Q., vol. 4, p. 59 (1887).

905. ——. *Assoc.with* Iron Pyrites, in brecciated diorite. *Loc.* King of the North Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 22 (1883).

906. ——. *Assoc.with* Copper Pyrites, Mispickel, Galena, Wolfram, Garnet, and Chlorite, in greywacke. *Loc.* King of the Ranges Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 28 (1883), and 222, pp. 41-50 (1910).

907. ——. *Assoc.with* Ironstone, in porphyry and chloritic rock. *Loc.* Leinster Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 22 (1883).

908. ——. *Assoc.with* Iron Pyrites and Galena, in diorite dyke. *Loc.* Mountaineer Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 28 (1883).

909. ——. *Assoc.with* Azurite and Malachite, in greywacke, sandstone, and steatite. *Loc.* North Australian Tin Mine, Watsonville (*ante*). *Refs.* G.S.Q. Pub. 13, p. 20 (1883), and 119, p. 10 (1897), and P.R.S.Q., vol. 4, p. 77 (1887), and vol. 15, p. 64 (1900).

910. ——. In greisen. Paisley and Chamberlain's Mine, Watsonville (*ante*). *Ref.* G.S.M.

911. Cassiterite. *Assoc.with* Ironstone and Wolfram, in chloritic blow. *Loc.* Parnell Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

912. ——. In serpentine and chlorite. Pride of the West Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

913. ——. In felspar and quartz. Queen of the West Tin Mine, Watsonville (*ante*). G.S.Q. Pub. 13, p. 26 (1883), and G.S.M.

914. ——. In sandstone. Ragged Tin Mine, Watsonville (*ante*). *Ref.* G.S.M.

915. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Cuprite, Malachite, Azurite, Stannine, Wolfram, Mispickel, Ironstone, Fluorspar, and Chlorite. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 26 (1883), and 119, p. 15 (1897).

916. ——. *Assoc.with* Garnet, in sandstone, kaolin, and chlorite. *Loc.* Struber's Tin Mine, Watsonville (*ante*). *Ref.* G.S.M.

917. ——. In quartz and porphyry. *Loc.* St. Kilda Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

918. ——In felspar and quartz. *Loc.* St. Patrick's Day Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

919. ——. *Assoc.with* Copper Pyrites, Copper Carbonate, Chalcanthite, Mispickel, Marcasite, Iron Pyrites, and Wolfram, in earthy hematite, limonite, chlorite, and quartz, in diorite. *Loc.* Try Again and Chance Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

920. ——. *Assoc.with* Mispickel and Chlorite, in quartz lode. *Loc.* Ulster Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, pp. 22, 24 (1883).

921. ——. *Assoc.with* Mispickel and Wolfram, in quartz lode. *Loc.* Victoria Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

922. ——. *Assoc.with* Wolfram, Molybdenite, Native Bismuth, Bismuthinite, Bismutite, Mispickel, Scorodite, Scheelite, and Manganese-dioxide, with traces of Iron Pyrites, Hematite, Limonite, Magnetite, etc., in irregular masses of quartz and greisen. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbullah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

922A.——. *Assoc.with* Garnet, in alluvial deposits. *Loc.* Calcifer, 133 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub., vol. 15, p. 66 (1900).

923. ——. *Assoc.with* Wolfram, Molybdenite, and Tenorite, with traces of Iron Pyrites, Hematite, Limonite, Mispickel, and Scorodite, in veins of coarse mica and quartz in greisen. *Loc.* California Cr., nr. Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

924. ——. In alluvial deposits. *Loc.* California Cr. (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 55 (1900).

925. ——. In lode. Canadian Mine, California Cr. (*ante*). *Ref.* G.S.M.

925A.——. *Assoc.with* Wolfram, Molybdenite, Monazite, Mispickel, Iron Pyrites, in quartz and felspar, in greisen country. *Loc.* California Cr. (*ante*). *Ref.* B.D.

926. ——. Fardowner Mine, California Cr. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 48 (1897).

927. ——. In chlorite. Gladstone Tin Mine, California Cr. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 42 (1897).

928. ——. *Assoc.with* Wolfram and Monazite. *Loc.* Emerson's Wolfram Mine, nr. head of California Cr., 6 miles E. of Ord (Mt. Garnet Rail. line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

929. ——. In lode. *Loc.* Albion Mine, Emu Cr., trib. of Walsh R., 12 miles S.E.byE. of Petford, 109 miles (by rail and road) S.W. of Cairns (Cairns-Chillagoe Rail.), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

930. ——. In lode. City of Pompeii Mine, Emu Cr. (*ante*). *Ref.* G.S.M.

931. ——. In lode. Giblet's Mine, Emu Cr. (*ante*). *Ref.* G.S.M.

932. ——. In lode. Hope Mine, Emu Cr. (*ante*). *Ref.* G.S.M.

933. ——. In lode. New Zealand Mine, Emu Cr. (*ante*). *Ref.* G.S.M.

934. ——. *Assoc.with* Orthoclase, in greisen lode. *Loc.* Pinnacle Lease, Emu Cr. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

935. ——. In lode. Royal Standard Mine, Emu Cr. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

936. ——. In lode. Star and Stripes Mine, Emu Cr. (*ante*). *Ref.* G.S.M.

937. ——. In lode. Tasmanian Mine, Emu Cr. (*ante*). *Ref.* G.S.M.

938. ——. *Assoc.with* Wolfram, Native Bismuth, Bismuthinite, and Bismutite, in quartz, muscovite, fluorspar, etc. *Loc.* Emuford, Emu Cr. (*ante*). *Ref.* B.D.

938A.——. *Assoc.with* Monazite, in alluvial deposits. *Loc.* Emu Cr., 3 miles N. of Fossilbrook, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

939. ——. In alluvial deposits. Five-mile Cr., br. of Rocky Tate R., 5 miles S.E. of Fisherton, Tate R., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

940. ——. In alluvial deposits. *Loc.* 4-Mile Cr., 6-Mile Cr., 9-Mile Cr., and 12-Mile Cr., branches of Tate R., nr. Fisherton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

940A.——. In alluvial deposits. *Loc.* Fossilbrook Stn (Firth's), on Fossilbrook Cr., 16 miles S.S.E. of Fossilbrook, 50 miles S. of Almaden Rail. Stn., Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields (*ante*).

941. ——. *Assoc.with* Wolfram, in quartz and fluorspar. *Loc.* Garden Cr., 4 miles N. of Fisherton, Tate R., 20 miles W.S.W. of Almaden, Chillagoe Rail., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

942. ——. *Assoc.with* Wolfram and Galena, with traces of Chrysocolla and Magnetite, in chlorite, muscovite, and fluorspar. *Loc.* Koorboora, 108 miles (by rail) S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. (*ante*). *Ref.* B.D.

943. ——. Fair-play Mine, Koorboora (*ante*).

944. ——. *Assoc.with* Iron Pyrites, Galena, and Mispickel. *Loc.* Iolanthe Tin Mine, Koorbora (*ante*). *Ref.* G.S.Q. Pub. 69, p. 11 (1891).

945. ——. Pillar Lease, Koorboora (*ante*). *Ref.* G.S.M.

946. ——. In quartz lode. Rosalind Tin Mine, Koorboora (*ante*). *Ref.* G.S.Q. Pub. 69, p. 11 (1891).

947. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, Mispickel, and Mica, in lode. *Loc.* Shakespeare Tin Lease, Koorboora (*ante*). *Ref.* G.S.Q. Pub. 69, pp. 10, 11 (1891).

947A.——. *Assoc.with* Silver and Galena. *Loc.* Tennyson Tin and Silver Mine, Koorboora (*ante*).

948. ——. *Assoc.with* Native Silver. *Loc.* Mine adjoining the Tennyson Mine, Koorboora (*ante*).

949. ——. *Assoc.with* Wolfram, Molybdenite, Bismutite, Chalcolite, and Topaz; with traces of Hematite and Limonite, in small veins, in large quartz topaz lode in granite. *Loc.* Lappa Wolfram Lode, 2½ miles S.S.W. of Lappa Junction Rail. Stn. (Chillagoe line), 104 miles (by rail and road) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

950. ——. *Assoc.with* Wolfram and Bismutite, with traces of Cuprite, Malachite, and Azurite, in quartz, fluorspar, etc. *Loc.* McCord's Cr., 5 miles N.N.W. of Fisherton, Tate R., 20 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

951. ——. In alluvial deposits. *Loc.* Mt. Barunda, Tate R., 1 mile E.N.E. of Fisherton, 24 miles W.S.W. of Almaden, Chillagoe Rail., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

952. ——. In alluvial deposits. *Loc.* Oakey Cr., Lappa Junction (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 55 (1900).

952A.——. *Loc.* Dalziel's Mines, head of Reid's Cr., 5½ miles N.E. of Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

952B.——. *Assoc.with* Hematite and Wolfram. *Loc.* Gurrumbar, Reid's Cr., br. of Emu Cr., 2 miles S. of Emuford, 12 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* A.R., p. 47 (1906).

953. ——. Gurrumbar, Reid's Cr., br. of Emu Cr. (*ante*). *Assay:* Tin = 31·4 per cent. *Ref.* A.R., 1907, p. 122.

954. ——. In lode in granite. Village Blacksmith Mine, Reid's Cr. (*ante*). *Ref.* G.S.Q. Pub. 192, p. 29 (1904).

955. ——. *Assoc.with* Wolfram, Molybdenite, and Scheelite, with traces of Malachite, Azurite, and Iron Pyrites, in defined quartz lodes and leaders in granite. *Loc.* Glen Atherton, 12 miles S.E. of Mareeba Rail. Stn., 18 miles S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* Cook.

956. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Tinaroo Cr., 6 miles N.N.E. of Tolga Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 49 (1900).

957. Cassiterite. *Assoc.with* Wolfram, in quartz lodes. *Loc.* Red River, Walsh and Tinaroo Mineral Fields. *Co.* —; *Dist.* Cook.

958. ——. In alluvial deposits. *Loc.* Atherton's Mine, Cairns District, 25 miles W. of head of inlet. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.M.

958A. ——. In alluvial deposits. *Loc.* Harkey's Cr., 2 miles inland from Double Is., about 20 miles N. of Redlynch Rail. Stn. (Cairns line). *Co.* Nares (*ante*). *Ref.* Q.G.M.J., vol. 9, p. 94 (1908).

959. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Kingsford's Sluicing Claim, on lead parallel with Barron R., near Cairns. *Co.* Nares (*ante*).

960. ——. *Loc.* Mt. Fraser Tin Mines, 6 miles N.byW. of Mt. Molloy tramway line, 24 miles N.byW. of Biboohra Rail. Stn. (Cairns line). *Co.* Nares (should be Dagmar) (*ante*).

961. ——. *Loc.* Mt. Lewis Tin Mines, 9 miles N.byW. of Mt. Molloy tramway line, 27 miles N.byW. of Biboohra Rail. Stn. (Cairns line) (*ante*).

962. ——. In alluvial deposits. Mt. Spurgeon, 22 miles, N.W. of Port Douglas. *Co.* Nares (should be Dagmar); *Dist.* Cook. *Ref.* A.R.D.M., 1889, p. 84.

963. ——. *Assoc.with* Gold in alluvial deposits. *Loc.* Tachappa Cr. and tributaries, Russell R., 13 miles W.N.W. of Geraldton, Russell Goldfield, 37 miles S. of Cairns. *Co.* Nares (*ante*). *Ref.* G.S.Q. Pub. 45, p. 2 (1888).

964. ——. *Assoc.with* Gold and Ironstone in alluvial deposits. *Loc.* Claims on Terraces, 20 miles W.byN. of Geraldton, Russell Goldfield (*ante*). *Ref.* G.S.Q. Pub. 89 (1893).

965. ——. *Assoc.with* Ironstone Sand, in alluvial deposits. *Loc.* Lower Crossing, Peach R., 180 miles N.W. of Cooktown, Cape York Peninsula. *Co.* Sidmouth; *Dist.* Cook. *Ref.* G.S.M.

965A. ——. *Loc.* Angor Tin Mines, 33 miles N.E. of Georgetown. *Co.* Tate; *Dist.* Cook.

966. ——. In alluvial deposits. *Loc.* Fossilbrook, 38 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Tate (*ante*). *Assay:* Metallic Tin = 60·9 per cent. *Ref.* A.R. 1906, p. 52.

966A. ——. *Assoc.with* Columbite, in alluvial deposits. In the heads beyond Fossilbrook, 34 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

967. ——. *Assoc.with* Wolfram, Bismutite, and Molybdenite, with traces of Copper Pyrites, Copper Carbonate, Hematite, Limonite, and Mispickel, in quartz, chlorite and muscovite. *Loc.* 4-Mile Mountain, 4 miles N.W. of Fossilbrook, 35 miles S.W. of Almaden Rail. Stn. (Chillagoe line) (*ante*). *Ref.* B.D.

968. ——. *Assoc.with* Wolfram and Molybdenite, with traces of Hematite and Limonite, in quartz and chlorite. Nightshade, Fossilbrook, 34 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line) (*ante*). *Ref.* B.D.

969. ——. *Assoc.with* Topaz and Beryl (bluish), in alluvial deposits. Lacewood Tin Mines, 10 miles N. of Brookland Stn., 30 miles W.S.W. of Fossilbrook, Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook. *Ref.* B.D.

——. *See further* Walsh and Tinaroo references *under* Kennedy North District.

970. ——. *Assoc.with* Topaz and Beryl. *Loc.* O'Brien's Cr., Nine-mile, nr. Brooklands Stn., 30 miles W.S.W. of Fossilbrook (*ante*).

970A. ——. *Loc.* Truxillo Tin Mines, 15 miles S.byW. of Fossilbrook. *Co.* Tate; *Dist.* Cook.

971. ——. *Var.* Wood Tin, in alluvial deposits. Percy R., br. of Gilbert R., nr. Gilberton, 60 miles S. of Georgetown, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 60 (1887).

971A. ——. In alluvial deposits. Robertson R., 16 miles S. of Charleston, Etheridge Goldfield (*ante*).

972. ——. In alluvial deposits. Five miles up from mouth of Pascoe R., Bowden Mineral Field, Cape York Peninsula. *Co.* Weymouth; *Dist.* Cook. *Ref.* B.D.

973. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Azurite, Mispickel, and Zinc-Blende, in quartz, greisen, and slate. *Loc.* Ballandean Tin Mine, Ballandean, 14 miles S.S.W. of Stanthorpe Main Rail. line. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.M., B.D., and L.C.B.

974. ——. In alluvial deposits. Ballandean, 14 miles S.S.W. of **Stanthorpe** Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 125, pp. 29, 30 (1897), and G.S.M.

975. ——. In alluvial deposits. Blue Mt. Tin Mine, Blue Mt. Cr., trib. of Kettle Swamp Cr., about 2½ miles E.N.E. of Stanthorpe Rail. Stn. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub., p. 52 (1889), and G.S.M.

976. ——. *Assoc.with* Stannite, Topaz, Zircon, Sapphire, Gold, Diamond, and Amethyst. *Loc.* Broadwater Cr. and branches, Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 31 (1898).

977. ——. In alluvial deposits. Brown's Gully, trib. of Sugarloaf Cr., 7 miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 125, p. 52 (1897), and G.S.M.

978. ——. *Assoc.with* Wolfram, in quartz and greisen. Between Blocks 248 and 443, ½-mile from Sugarloaf Mt., Brown's Gully (*ante*). *Ref.* G.S.Q. Pub. 120, p. 44 (1898).

979. ——. *Assoc.with* Wolfram and Molybdenite, in quartz and greisen. *Loc.* Shannon's Reef, Block 459, nr. ridge of Sugarloaf Mt., Brown's Gully (*ante*). *Ref.* G.S.Q. Pub. 120, p. 44 (1898), and G.S.M.

980. ——. *Assoc.with* Wolfram, in greisen. *Loc.* S.W. of Trollope's Hill, nr. Sugarloaf Mt., Brown's Gully (*ante*). *Ref.* G.S.Q. Pub. 120, p. 44 (1898).

981. ——. *Assoc.with* Beryl, in alluvial deposits. *Loc.* Dolcoath Cr., trib. of Quart Pot Cr., 3 miles E.byS. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, p. 85 (1898).

981A. ——. *Assoc.with* Wolfram, in quartz and greisen. *Loc.* Block 450, Dolcoath Cr. (*ante*). *Ref.* G.S.Q. Pub. 120, p. 46 (1898).

982. ——. In alluvial deposits. Dolcoath Flat Tin Mine, Dolcoath Cr. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 51 (1897).

983. ——. In alluvial deposits. *Loc.* Funker's Gap Cr., trib. of Quart Pot Cr., nr. Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.M. and G.S.Q. Pub. 120, pp. 30, 33-36 (1898).

984. ——. In alluvial deposits. *Loc.* Granite Cr., nr. Stanthorpe (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 60 (1887).

985. ——. *Assoc.with* Diamond, Sapphire (green, blue, and pink), Spinel, Beryl, Zircon, Garnet, Tourmaline, Topaz, Amethyst, Cairngorm, Rock Crystal, and traces of Gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot, Sugarloaf, Lode, Arbouin's, Cannon, and Kettle Swamp Creeks, and Severn R., Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120 (1898), and B.D.

986. ——. *Assoc.with* Diamond, in alluvial deposits. *Loc.* Kettle Swamp Cr. (Blue Mt. Cr.), N.E.andE. of Mt. Marley, about ½-mile E.N.E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

987. ——. In greisen. Nichol's Lode, Lode Cr., 5½ miles E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M. and A.R.D.M., 1885, p. 58.

988. ——. *Assoc.with* Wolfram and Molybdenite, in quartz and greisen. Noble Tin Mg. Coy., and Lode Cr. Tin Mg. Co.'s Blocks (351 and 352), head of Lode Cr. (*ante*). *Ref.* G.S.Q. Pub. 120, p. 45 (1898).

989. ——. In lode. Wellesley Tin Mg. Co.'s Property (Sel. 347), Lode Cr. (*ante*). *Average Yield:* Tin Ore = 15 per cent. *Ref.* G.S.Q. Pub. 40, p. 4 (1887).

990. ——. In alluvial deposits. Lode Cr. (*ante*). *Ref.* G.S.Q. Pub. 120, p. 39 (1898).

991. ——. In alluvial deposit. London Tin Mines, nr. Cemetery, Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.M.

991A. ——. *Assoc.with* Wolfram, in quartz and greisen. *Loc.* Lord Nolan Claim, Stanthorpe (*ante*). *Ref.* A.R., pp. 326-328 (1911).

992. ——. In alluvial deposits. *Loc.* Maryland Cr., br. of 10-Mile Cr., 9 miles W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M.

993. —— In alluvial deposits, and in greisen and quartz. Mt. Marley, 1¼ miles N.E.byE. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M., G.S.Q. Pub. 120, pp. 36, 46, 47 (1898), and 125, p. 51 (1897).

994. ——. In quartz lode. Between Mt. Marley and Kettle Swamp Cr., 1½ miles E.N.E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M.

995. ——. In greisen. Welsby's Lode, Block 588, Mt. Station Gully, trib. of Quart Pot Cr., 4¾ miles S.E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M.

996. ——. *Assoc.with* Copper Carbonate and Mispickel, in lode. *Loc.* Nundubbermere Run, 13 miles S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 40, p. 4 (1887).

997. ——. *Assoc.with* Wolfram and Iron Pyrites, in quartz lode. Brere's Claim, Pikedale Cr., 9 miles W.byN. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 47 (1898).

998. Cassiterite. *Assoc.with* Mispickel, Wolfram, Molybdenite, in greisen lode, in granite. Pikedale Lode, Sels. (705, 706w), Pikedale Cr. (*ante*). *Assays: See* No. 3840. *Ref.* G.S.Q. Pubs. 40, p. 4 (1887), and 120, p. 47 (1898).

999. ——. In alluvial deposits. In the western streams flowing into Pike's Cr., about 32 to 34 miles S.W.byS. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, p. 30 (1898).

1000. ——. In alluvial deposits. Brisbane Co.'s Tin Dredging Area, Quart Pot Cr., about 3½ miles E.S.E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pubs. 120, p. 34 (1898), and 125, p. 51 (1897), and G.S.M.

1001. ——. *Assoc.with* Ilmenite, etc., in alluvial deposits. Britannia Tin Mine, Quart Pot Creek, 1¼ miles W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

1002. ——. In alluvial deposits. Hannigan's Mine, Quart Pot Cr., nr. Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 125, p. 28 (1897).

1003. ——. *Assoc.with* Sapphire (green and blue), Tourmaline, Topaz, and Diamond, in alluvial deposits. *Loc.* Kettle Swamp, Quart Pot Cr. (*ante*). *Ref.* G.S.Q. Pub. 120, p. 36 (1898).

1004. ——. *Assoc.with* Copper Pyrites, Wolfram, and Molybdenite, in quartz vein in greisen. *Loc.* Kettle Swamp, Quart Pot Cr. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 29 (1897), and G.S.M.

1005. ——. *Assoc.with* Wolfram, in quartz lode. *Loc.* on ridges, left bank of Quart Pot Cr. (*ante*). *Ref.* G.S.Q. Pub. 12, p. 2 (1882).

1006. ——. *Assoc.with* Wolfram, in alluvial deposits. *Loc.* Quart Pot Cr. and its tributaries (*ante*). *Ref.* G.S.Q. Pubs. 12, p. 2 (1882), and 120, pp. 33-35 (1898).

1007. ——. *Assoc.with* Wolfram, in stockwerks in granite rock. *Loc.* Storm King and Lady Normanby Tin Mines, in Blocks 589, 609, junction of Quart Pot Cr. and Mt. Station Gully, 5 miles S.E. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, pp. 46, 47 (1898).

1008. ——. *Assoc.with* Copper Pyrites, Chrysocolla, Wolfram, and Mispickel, in quartz lode. *Loc.* Great Eastern Tin Mine (Block 24), Red Rock Cr., br. of Severn R., 11 miles W.S.W. of Ballandean, 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, pp. 49, 50 (1898).

1008A. ——. In felspathic rock. Johnston's Claim, Red Rock Cr., br. of Severn R. (*ante*). *Ref.* O.R. (1909).

1009. ——. In quartz lode. Sels. 55w, 71w, 72w, 288w, 290, 313, 523w, Red Rock Cr., Severn R. (*ante*). *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

1010. ——. In alluvial deposits. Beverley Tin Mine, Beverley, 5 miles S.W. of Stanthorpe, Main Rail. line. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, pp. 41 and 42 (1898).

1011. ——. *Assoc.with* Wolfram, Molybdenite, and Molybdite, in quartz and greisen. *Loc.* Burnt Hut, Severn R., about 6 miles W.byS. of Ballandean, 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 48 (1898).

1011A. ——. *Assoc.with* Bismutite and Wolfram. Burnt Hut, Severn R. (*ante*). *Assay: see* Ref. *Ref.* A.R., p. 173 (1909).

1012. ——. In alluvial deposits. Glen Aplin, Severn R., 8 miles (by rail) S.S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pubs. 125, p. 52 (1897), and 120, pp. 41, 42 (1898).

1013. ——. *Assoc.with* Sapphire, in alluvial deposits. Junction of Severn R. and Quart Pot Cr., 1¾ miles S.W.byW. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

1014. ——. In alluvial deposits. Killminster, Severn R., 5 miles N.W.byW. of Ballandean Rail. Stn., 19 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 47 (1898).

1015. ——. *Assoc.with* Iron Pyrites, Mispickel, Wolfram, Molybdenite, and Scorodite. *Loc.* P.A. (48), Sluicers, Severn R., 6 miles W. of Ballandean, 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 191, p. 10 (1904).

1016. ——. *Assoc.with* Common Opal. *Loc.* One mile N.W. of Ballandean, Severn R., 15 miles S.S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

1017. ——. *Assoc.with* Wolfram and Copper Ores, in lodes. *Loc.* Severn R., 7 miles W. of Ballandean, 21 miles (by rail and road) S.S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

1018. ——. *Assoc.with* Copper Pyrites, Zinc-Blende, and Galena, in chlorite, quartz, and fluorspar lodes. *Loc.* On bank of Severn R., 7 miles W. of Ballandean (*ante*). *Ref.* B.D.

1019. ——. In greisen. Smith's Secret Lode, Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M.

1020. ——. In alluvial deposits. Corrigan's Mine, Spring Cr., trib. of Broadwater Cr., 4¼ miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 32 (1898), and P. 125, p. 28 (1897).

1021. ——. In alluvial deposits. Rosia, Spring Cr., trib. of Broadwater Cr. (*ante*). *Ref.* G.S.M.

1022. ——. In alluvial deposits. Sim's Cr., Spring Cr. (*ante*). *Ref.* G.S.Q. Pubs. 120, p. 32 (1898), and 125, p. 29 (1897).

1022A.——. *Assoc.with* Sapphire, Cairngorm, Zircon, Tourmaline, and Rock Crystal, in alluvial deposits. *Loc.* Camp Reserve, Spring Cr. (*ante*). *Ref.* B.D.

1023. ——. *Assoc.with* Cairngorm, Topaz, Sapphire, Zircon, Spinel, Garnet, Diamond, and Gold, in alluvial deposits. *Loc.* Spring Cr. and its tributaries, 2¾ miles W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, p. 32 (1898).

1024. ——. *Assoc.with* Native Bismuth, in alluvial deposits. *Loc.* Stanthorpe Mineral Field, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 44 (1887).

1025. ——. In alluvial deposits. Big Ruby Tin Mine, Block 406, Sugarloaf Cr., trib. of Quart Pot Cr., about 8 miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 125, p. 52 (1897).

1026. ——. In lode in greisen country. Block 607, S. of Arbouin's Gully, Sugarloaf Cr., 7½ miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 43 (1898).

1027.——. In alluvial deposits. Victoria Mine, Sugarloaf Cr., trib. of Quart Pot Cr., about 6½ miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 37 (1898), and G.S.M.

1028. ——. In lodes. Sugarloaf Cr., trib. of Quart Pot Cr., 2 miles E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 12, p. 1 (1882).

1029. ——. *Assoc.with* Iron Pyrites, Mispickel, Scorodite, Zinc-Blende, and Hornblende, in slate. *Loc.* Beacroft's Workings, Sundown Cr., 12 miles S.W.byW. of Ballandean, 26 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 191, p. 23 (1904).

1030. ——. *Assoc.with* Mispickel and Wolfram. *Loc.* Clare's Open Cut, nr. Sundown Mine, Sundown Cr. (*ante*). *Ref.* G.S.Q. Pub. 191, p. 23 (1904).

1031. ——. *Assoc.with* Copper Pyrites, Mispickel, Wolfram, Zinc-Blende, Calcite, Chlorite, and Orthoclase, in quartz lode. *Loc.* Sundown Copper Mine, Sundown Cr. (*ante*). *Assay*: *See* No. 2192. *Ref.* G.S.Q. Pub. 191, p. 22 (1904), and G.S.M.

1032. ——. In alluvial deposits. Bottalie Tin Mine, 13-Mile Cr., trib. of Pike's Cr., about 10 miles W.N.W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 125, p. 51 (1897).

1033. ——. *Assoc.with* Gold and Stibnite, in alluvial deposits. *Loc.* Head of 13-mile Cr., trib. of Pike's Cr. (*ante*). *Ref.* G.S.Q. Pub. 120, p. 30 (1898), and B.D.

1034. ——. In alluvial deposits. Waroo Tin Mine, 38 miles W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* B.D.

1035. ——. In lode. Warralto Cr., Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

1036. ——. In lode. William's Mine, Queensland-N.S.W. Border, Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M.

1037. ——. In chloritic lode and in ferruginous sandstone. Alhambra, Nos. 1 and 2 Mines, Coolgarra, 12 miles (by coach) N.N.E. of Mt. Garnet (Chillagoe Br. Rail.), **Walsh and Tinaroo Mineral Fields.** *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 192, p. 27 (1904), and G.S.M.

1038. ——. In basic dyke. Anderson's Tin Lode, **Coolgarra** (*ante*). *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

1039. ——. In lode. Austral Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

1040. ——. In chlorite. Beaconsfield Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pubs. 72, p. 3 (1891), and 125, p. 47 (1897).

1041. ——. *Assoc.with* Turgite. *Loc.* Blair's Mine, Coolgarra (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

1042. Cassiterite. In lode. Bonnie Dundee Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

1043. ——. In quartz lode. Federal Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 165, p. 4 (1901).

1044. ——. *Assoc.with* Hematite, in quartz lode. *Loc.* Grand Junction Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

1045. ——. In quartz. John Bull Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

1046. ——. Junction Extd. Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

1047. ——. In quartz lode. Koh-i-noor Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

1047A. ——. *Assoc.with* Copper Pyrites and Fluorspar, in chloritic lode. *Loc.* Lottie Mine, Coolgarra (*ante*). *Ref.* G.S.M.

1048. ——. In lode. Lovely Ethel Mine, Coolgarra (*ante*). *Ref.* G.S.M.

1049. ——. *Assoc.with* Hematite and Limonite, in quartz lode. *Loc.* Magdala Tin Mine, Magdala Hill, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

1050. ——. In lode. Mt. Bismarck, Return Cr., Coolgarra (*ante*). *Ref.* G.S.M.

1051. ——. *Assoc.with* Topaz. Never-Can-Tell Mine, Coolgarra (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887), and G.S.Q. Pub. 72, p. 4 (1891).

1052. ——. *Assoc.with* Mispickel, in lode. *Loc.* North Britain Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

1053. ——. In lode, in dyke rock. Stephen's Extd. Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

1054. ——. In quartz lode. St. Patrick's Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

1055. ——. *Assoc.with* Penninite and Hematite, in quartz lode. Tasmania Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

1056. ——. In lode. The Wandering Digger Mine, Coolgarra (*ante*). *Ref.* G.S.M.

1057. ——. *Assoc.with* Galena and Iron Pyrites, in quartzose rock. *Loc.* Victoria Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

1058. ——. In lode. Young Almanac Tunnel, Coolgarra (*ante*). *Ref.* G.S.M.

1059. ——. *Assoc.with* Iron Pyrites, Mispickel, Hematite, Limonite, Göthite, Wolfram, Malachite, Azurite, Fluorspar, Chlorite, Penninite, Websterite, and Topaz. *Loc.* In the Tin Mines at Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

1060. ——. *Assoc.with* Fluorspar and Felspar, in lodes. *Loc.* Return Cr., br. of Herbert R., nr. Coolgarra, about 10 miles S.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pubs. 13, p. 30 (1883), 72, p. 1 (1891), 125, p. 41 (1897), 134, p. 16 (1898), 165, p. 4 (1901), and 192, p. 27 (1904), and G.S.M.

1061. ——. In chlorite. ½-mile N. of Coolgarra Post Office, 9½ miles N.N.E. of Mt. Garnet Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Metallic Tin = 33 per cent. *Ref.* A.R., p. 86 (1907).

1062. ——. In lode. Dalcoath Tin Mine, 3 miles W. of Coolgarra, 9 miles N.N.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

1063. ——. In alluvial deposits. Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of **Herberton,** Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

1063A. ——. Mt. Ogston Tin Claim, Dry R. (*ante*). *Assay: see* Ref. *Ref.* A.R., p. 270 (1910).

1064. ——. *Assoc.with* Copper. *Loc.* Argylla Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 43 (1887).

1065. ——. In quartz lode. Big Ben Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 8 (1883).

1066. ——. In quartz lode, in fine-grained serpentinous dyke. Birthday Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 15 (1883).

1067. ——. In quartz lode. Black Chief Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 17 (1883).

1068. ——. In quartz lode. Black King Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 13 (1883).

1069. ——. *Assoc.with* Wolfram and Fluorspar, in quartz, diorite, and chlorite. *Loc.* Bradlaugh Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 15 (1883), P.R.S.Q., vol. 15, p. 54 (1900), and G.S.M.

1070. ——. In quartz lode. Brisbane United Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 13 (1883).

1071. ——. In chlorite lode. Chance Tin Mine, Herberton (*ante*). *Ref.* B.D.

1072. ——. In ferruginous quartz. Clyde Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 17 (1883).

1073. ——. *Assoc.with* Wolfram, in quartz lode. *Loc.* Cornstalk Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 10 (1883).

1074. ——. In kaolin. Cosmopolitan Mine, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 70 (1887).

1075. ——. *Assoc.with* Native Copper, in quartz veins. *Loc.* Cottais Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 5 (1883).

1076. ——. In lode. Crœsus Mine, Herberton (*ante*). *Ref.* B.D.

1077. ——. In quartz and chlorite lode. Dawn of Hope Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 6 (1883).

1078. ——. *Assoc.with* Tourmaline, in quartz. *Loc.* Day Dawn Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 16 (1883).

1079. ——. *Assoc.with* Wolfram, Fluorspar, and Serpentine, in quartz lode. *Loc.* Defiance Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, pp. 7, 16 (1883).

1080. ——. In lode. Denny's Mary Mine, Halpin's Cr., Herberton (*ante*). *Ref.* G.S.M.

1081. ——. *Assoc.with* Fluorspar, in chlorite lode. *Loc.* Erin-go-bragh Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 5 (1883).

1082. ——. In quartz lode. General Grant Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 7 (1883).

1083. ——. *Assoc.with* Wolfram, in serpentine and quartz lode. *Loc.* Glanmire Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 12 (1883).

1084. ——. In lode. Gt. Britain Mine, Herberton (*ante*). *Ref.* G.S.M.

1085. ——. *Assoc.with* Cuprite, in chlorite and serpentine. *Loc.* Gt. Eastern Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 11 (1883).

1085A.——. *Assoc.with* Fluorspar, in quartz. *Loc.* Gt. Eastern No. 1 Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 7 (1883).

1086. ——. *Assoc.with* Mispickel, Hornblende, Steatite, Chlorite, Biotite, and Orthoclase, in lode. *Loc.* Gt. Northern P.C., Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 3 (1883), and P.R.S.Q., vol. 4, p. 77 (1897), vol. 15 (1900).

1087. ——. *Assoc.with* Malachite and Azurite. *Loc.* Gt. Northern Tin Mine, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 77 (1887).

1088. ——. *Assoc.with* Fluorspar, in lode. *Loc.* Great Northern Tin Mine, Herberton (*ante*). *Ref.* B.D.

1089. ——. *Assoc.with* Wolfram. Gt. Northern Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 125, p. 43 (1897).

1090. ——. In quartz lode. Gt. Western P.C., Herberton (*ante*). *Ref.* G.S.M.

1091. ——. In quartz lode. Hadleigh Castle, Herberton (*ante*). *Ref.* G.S.Q. Pub. 119, p. 25 (1897), and G.S.M.

1092. ——. In alluvial deposits. Harvey's Cr., Herberton (*ante*). *Ref.* G.S.M.

1092A.——. *Assoc.with* Fluorspar. *Loc.* Hickey's Mine, Herberton (*ante*). *Ref.* Q.M.

1093. ——. *Assoc.with* Native Bismuth, in quartz lode. *Loc.* Home Rule Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 8 (1883).

1094. ——. *Assoc.with* Chlorite, in dyke rock. *Loc.* Irish National League Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 6 (1883).

1095. ——. *Assoc.with* Copper Pyrites, Mispickel, and Chalcanthite, in elvan dyke and quartz. *Loc.* Ironclad Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 8 (1883).

1096. ——. *Assoc.with* Iron Pyrites and Fluorspar, in quartz and serpentine. *Loc.* Levant Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 15 (1883).

1097. ——. *Assoc.with* Wolfram, Iron Pyrites, and Fluorspar, in quartz and chlorite. *Loc.* Leviathan Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 14 (1883).

1098. ——. In serpentine. London Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 12 (1883).

1099. ——. *Assoc.with* Galena. Louisa Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 18 (1883).

1100. ——. *Assoc.with* Wolfram, in chlorite and quartz. *Loc.* Ly-e-Moon Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 7 (1883).

1101. Cassiterite. In quartz lode. Maori Chief Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 18 (1883).

1102. ——. In quartz and diorite. Monarch Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 13 (1883).

1102A. ——. *Assoc.with* Copper Pyrites, Mispickel, Chlorite, and Muscovite, in quartz. *Loc.* Monazite Claim, Herberton. *Co.* Cardwell (*ante*). *Ref.* B.D.

1103. ——. In quartz lode. Nancy Lee Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 18 (1883).

1104. ——. *Assoc.with* Wolfram and Mica, in ferruginous quartz. *Loc.* Nelly Grant Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 7 (1883).

1105. ——. In quartz and chlorite. New Chum Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 17 (1883).

1106. ——. *Assoc.with* Cairngorm, Common Opal, and Opalised Wood, in alluvial deposits. *Loc.* Brewery Hill, Nigger Cr., Herberton (*ante*). *Ref.* G.S.M.

1107. ——. *Assoc.with* Wolfram and Fluorspar, in quartz lode. *Loc.* Nova Scotia Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 11 (1883).

1108. ——. In chlorite lode. Old Chum Mine, Herberton (*ante*). *Ref.* G.S.M.

1109. ——. *Assoc.with* Malachite and Talc, in quartz. *Loc.* Orient Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 13 (1883).

1110. ——. *Assoc.with* Wolfram, in quartz and chlorite. *Loc.* Perseverance Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 19 (1883), and G.S.M.

1111. ——. *Assoc.with* Iron Pyrites, in lode. *Loc.* Phœnix Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 15 (1883).

1112. ——. *Assoc.with* Fluorspar, in quartz lode. *Loc.* Poor Stroller Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 18 (1883).

1113. ——. In quartz and chlorite. Queen Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 19 (1883).

1114. ——. In quartz lode. Republic Mine, Herberton (*ante*). *Ref.* G.S.M.

1115. ——. In quartz lode, in diorite dyke. Scotsman Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 15 (1883).

1116. ——. In chlorite and quartz. Shamrock Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 13 (1883).

1117. ——. *Assoc.with* Wolfram, Steatite, Serpentine, Chlorite, and Orthoclase, in quartz lode. *Loc.* Soggoarth Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 6 (1883), and P.R.S.Q., vol. 4, p. 59 (1887).

1118. ——. *Assoc.with* Chlorite, in dyke. *Loc.* Southern Cross Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 5 (1883), and G.S.M.

1119. ——. In chlorite, talc, and quartz. Surprise Tin Mine, Herberton (*ante*). *Ref*, G.S.Q. Pub. 13, p. 17 (1883).

1120. ——. In Serpentine, Chlorite, and Fluorspar. Syndicate Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 12 (1883).

1121. ——. *Assoc.with* Iron Pyrites and Steatite, in diorite dyke. *Loc.* St. Mungo Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

1122. ——. *Assoc.with* Viridite, Steatite, and Serpentine, in quartz, diorite, and porphyry. *Loc.* St. Patrick Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 8 (1883).

1123. ——. *Assoc.with* Ilmenite, Wolfram, Topaz, and Gold (traces), in alluvial deposits. *Loc.* The Deep Lead, Herberton (*ante*). *Ref.* G.S.Q. Pubs. 115, pp. 1-15, and 125, p. 49 (1897).

1124. ——. In quartz in elvan dyke. Three Star Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 13 (1883).

1125. ——. *Assoc.with* Wolfram, in quartz lode. *Loc.* True Blue Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 16 (1883).

1126. ——. *Assoc.with* Mispickel, in quartz lode. *Loc.* Ulster Tin Mine, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

1127. ——. In quartz and felspar. Welcome Claim, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 10 (1883).

1128. ——. *Assoc.with* Copper Pyrites, in penninite and talc. *Loc.* Wheal Vohr Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 16 (1883), and P.R.S.Q., vol. 15, p. 64 (1900).

1129. ——. In alluvial deposits and in lode. Wilsh Irishman Tin Mine, Herberton (*ante*). *Ref.* G.S.M.

1130. ——. *Assoc.with* Wolfram and Fluorspar, in lodes and alluvial deposits. *Loc.* Wild River Tin Mines, Herberton (*ante*). *Ref.* G.S.Q. Pub. 9, pp. 8, 9 (1881).

1131. ——. *Assoc.with* Wolfram and Molybdenite, in diorite. *Loc.* Young American Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 9 (1883).

1132. ——. *Assoc.with* Sapphire, in alluvial deposits. *Loc.* Herberton (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 57 (1887).

1133. ——. In lode. Alexandria Tin Mine, Mowbray Cr., trib. of Dry R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* B.D.

1134. ——. In alluvial deposits and in lode. Mowbray Cr., trib. of Dry R. (*ante*). *Ref.* G.S.M.

1135. ——. Mt. Ormonde, 6 miles E. of Irvinebank, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North.

1136. ——. *Assoc.with* Wolfram, Molybdenite, Scheelite, Wad, and Monazite, with traces of Cuprite, Malachite, Azurite, Iron Pyrites, Limonite, Mispickel, and Scorodite, in irregular masses and in defined lodes in slates and greisen. *Loc.* Nettle's or Innot's Cr. Wolfram Mines, 4 miles E. of and 3 miles S.E. of Coolgarra, and 10 to 14 miles N.E. of Mt. Garnet Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

1137. ——. *Assoc.with* Corundum (green and yellow), in alluvial deposits. *Loc.* Nettle's or Innot's Cr. (*ante*). *Ref.* B.D.

1138. ——. In alluvial deposits. Hot Springs, Nettle's or Innot's Cr. (*ante*). *Assay:* Metallic Tin = 75 per cent. *Ref.* G.S.Q. Pub. 125, p. 49 (1897).

1139. ——. *Assoc.with* Bismuth (native), Copper, and Ironstone, in lode. *Loc.* Lancelot Tin Mine, Newellton (Silver Valley), 9 miles S.W. of Herberton, 10 miles S.E.byS. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Assay:* Tin = 63 per cent.; Bismuth = 4½ per cent. *Ref.* G.S.Q. Pub. 119, p. 27 (1897), and G.S.M.

1140. ——. In Chlorite. Stenhouse Mine, Newellton (*ante*). *Ref.* G.S.Q. Pub. 125, p. 44 (1897.

1141. ——. *Assoc.with* Native Copper. *Loc.* Newellton (Silver Valley) (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 54 (1900).

1142. ——. *Assoc.with* Copper Pyrites and Zinc-Blende. *Loc.* Proprietary Tin Mines, Smith's Cr., Nymbool, 28 miles N.W.byN. of Lappa Junction (Chillagoe line), 130 miles S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Analysis of Ore:* Copper, 0·08 per cent.; Lead, nil; Wolfram, 0·13 per cent.; Arsenic, 0·17 per cent.; Sulphur, 0·37 per cent.; Tin (Metallic), 2·04 per cent.; Bismuth, trace. *Analysis of Concentrates:* Tin Oxide, 80·48 per cent.; Copper, 1·12 per cent.; Bismuth, 0·57 per cent.; Iron Oxide, 2·23 per cent.; Tungstic Acid, 7·18 per cent.; Sulphur, 1·46 per cent.; Silica, 2·32 per cent.; Arsenic, Antimony, Manganese, etc., 4·64—100·00. *Ref.* G.S.Q. Pub. 192, p. 29 (1904).

1143. ——. *Assoc.with* Fluorspar, in quartz in diorite dyke. *Loc.* Cardigan Tin Syndicate Mines, Thompson's Cr., trib. of Dry R., 10 miles S. of Watsonville, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 165, pp. 1, 4 (1901).

1144. ——. In quartz, in diorite dyke. Chesterfield Tin Mine, Thompson's Cr. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 29 (1883).

1145. ——. In quartz. Colossus Tin Mine, Thompson's Cr. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 29 (1883).

1146. ——. In quartz-diorite. Pompeii Tin Mine, Thompson's Cr. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 29 (1883).

1147. ——. In lode in diorite dyke. Tasmanian Tin Mine, Thompson's Cr. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 29 (1883).

1148. ——. In quartz and diorite. Vesuvius No. 1 Tin Mine, Thompson's Cr. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 29 (1883).

——. *See further* Walsh and Tinaroo references *under* Cook District.

1149. ——. In lode. Shardon's Mine, nr. head of 5-Mile Cr., Mt. Ruby, 8 miles S. of Cardwell. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.M.

1150. ——. In alluvial deposits. Jack's Cr., 25 miles from Continong, Burdekin R., 95 miles W. of Townsville. *Co.* O'Connell; *Dist.* Kennedy North. *Ref.* G.S.M.

1151. ——. Sandy Cr., 3 miles N. of Hillgrove Stn., 55 miles N.N.W. of Charters Towers. *Co.* O'Connell (*ante*). *Ref.* A.R.D.M. 1907, p. 38.

1151A. ——. In Kaolin lode. Lucky Hit, McMahon, Mystery, Ruby, Standard Tin Lodes, Sandy Cr., about 80 miles (by road) *viâ* Hillgrove Station, N.W. of Charters Towers. *Co.* O'Connel (*ante*). *Ref.* G.S.Q. Pub. 235 (1911).

1152. Cassiterite. Cloudy Cr., Kangaroo Hills Mineral Field, 40 miles S.W. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* A.R.D.M. 1896, p. 110.

1153. ——. *Assoc.with* Malachite, Azurite, Hematite, Limonite, and Iron Pyrites, in quartz and Chlorite. *Loc.* M.L., Douglas Cr., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

1153A.——. In alluvial deposits. Gypsy King Tin Mine, head of Hell Hole Cr., Kangaroo Hills Mineral Field (*ante*). *Ref.* Q.G.M.J., vol. 7, pp. 239-242 (1906).

1154. ——. In lodes. Mt. Benham, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 167, p. 6 (1901).

1155. ——. *Assoc.with* Bismuth Ore, Copper Carbonate, and Ironstone, in chlorite and quartz. *Loc.* Achilles Lease (252), Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 9 (1892), and G.S.M.

1156. ——. *Assoc.with* Mispickel and Fluorspar, in chloritic lode. *Loc.* New Chum Lease 194, Butterfly Gully, Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 10, (1892), and G.S.M.

1157. ——. In alluvial deposits and in lodes. Mt. Spec, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.M. and A.R.D.M., 1896, p. 10.

1158. ——. In Chloritic lode. Douglas Tin Mine, Oakey Cr., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 167, p. 5 (1901).

1159. ——. *Assoc.with* Galena and Copper Pyrites. *Loc.* Kangaroo Hills Tin Freeholds (166, 198), Oakey Cr. (*ante*). *Ref.* G.S.Q. Pub. 167, p. 5 (1901).

1160. ——. In lodes. Planet Group of Leases, Oakey Cr. (*ante*). *Ref.* G.S.Q. Pub. 167, pp. 4, 5 (1901).

1161. ——. *Assoc.with* Topaz and Magnetite, in alluvial deposits. *Loc.* Sandy and Prospectors' Creeks, Oakey Cr. (*ante*). *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

1162. ——. In Chlorite lode. Waverley Tin Leases, Oakey Cr. (*ante*). *Ref.* G.S.Q. Pub. 167, p. 4 (1901).

1163. ——. In quartz and Chlorite. Hidden Valley Tin Lodes, Running R., Kangaroo Hills Mineral Field. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 167, p. 6 (1901).

1163A.——. In alluvial deposits. Red Hill, Kangaroo Hills Mineral Field (*ante*). *Ref.* Q.G.M.J., vol. 7, pp. 239-242 (1906).

1164. ——. In alluvial deposits. Dingo Cr., 30 miles from Kangaroo Hills. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 10 (1891).

1165. ——. In alluvial deposits. Creek W. of Keelbottom R., between Plumtree Hotel and Star and Dotswood Run, Star R., 50 miles (by coach) N.W. of Ravenswood Junction. *Co.* Wilkie Gray; *Dist.* Kennedy North.

1166. ——. *Assoc.with* Garnet and Topaz, in alluvial deposits. *Loc.* Running Cr., Star R. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 60 (1887), and G.S.M.

1167. ——. In alluvial deposits. Black Gin Cr., Clark R., Upper Burdekin. *Co.* —; *Dist.* Kennedy North. *Ref.* G.S.M.

1168. ——. *Assoc.with* Magnetite, Ilmenite, and Zircon. *Loc.* Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* O.R.

1169. ——. *Assoc.with* Gold, Wolfram, and Ilmenite, in quartz lode. *Loc.* Crow's Nest Tin deposits, 3 miles E. of Crow's Nest Township, 37 miles (by rail and road) N. of Toowoomba. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 175, p. 4 (1902), and Q.G.M.J., vol. 4, pp. 527, 529 (1903).

1170. ——. In alluvial deposits. Crow's Nest Tin Deposits (*ante*). *Ref.* G.S.M.

1171. ——. *Assoc.with* Gold, Iron Pyrites, Massicot, Cerussite, Bismuth, and Calcite, in kaolinised greisen. *Loc.* Snowdrop P.A., Emu Cr., Mt. Langan, 14½ miles W.N.W. of Kannungar Rail. Stn. (Brisbane Valley line). *Co* Cavendish; *Dist.* Moreton. *Ref.* Q.G.M. Jour., vol. 7, p. 467 (1906).

1172. ——. In alluvial deposits. Seven-mile Diggings, 7 miles S.E. of Nanango, 54 miles (by rail and road) N.N.W. of Kannungar Rail. Stn. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 29, p. 2 (1886).

1173. ——. In alluvial deposits. Mt. Taylor, nr. Kingston Rail. Stn. (South Coast line), 17 miles S.E. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* L.C.B.

1174. ——. *Assoc.with* Gold, Silver, Platinum, and Monazite, as beach sand deposits. *Loc.* Currumbin Cr. to Point Danger, Tweed Heads, 69 miles (by rail) S.S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. For analyses and notes *see* G.S.Q. Pub. 198 (1905).

1175. ——. In alluvial deposits below basalt. Kroombit Diggings, 55 miles S.W. of Gladstone. *Co.* Pelham; *Dist.* **Port Curtis.** *Ref.* L.B. 1, p. 690 (1885).

Castle Cr. Run, 128 miles W. of Bundaberg. *Min.Ref.* Copper, *see* 1849.

—— Hill, Townsville. *Min.Ref.* Fluorspar, *see* 2862; Gold, 4007.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 361.

Castleroi Sub-artesian Bore. *See under* Artesian Bores. No. 266.

Castleton. Etheridge Goldfield, *see maps*, Pls. 8, 9, 32. *Lat.*, 18° 38′ S.; *Long.*, 146° 36′ E. *Reefs:* Balmoral, Big, Eugene, Federation, Forget-me-not, Havelock, Republic, Sunburnt, Victory, etc., etc. *Min.Ref.* Anglesite, *see* 21c; Cerusite, 1190; Copper Pyrites, 2145, 2146; Galena, 2746-2748; Gold, 3718-3720; Iron Pyrites, 5039-5041; Mispickel, 6680; Silver, 7449A.

Casuarina Island. Fitzroy River, near Keppel Bay. On the island wells have been sunk to a salt water bed, and works were established to treat the brine. The venture, however, did not succeed, on account, it is said, of the excessive cost of production.

Several shallow bores have been sunk for fresh water, but they met with salt water, and one, known as Murray's Bore, sunk to a depth of about 233 feet, met with several beds of oil-bearing clays between 106 feet and the bottom. A bed of black carbonaceous shale was penetrated at about 190 feet, some of the material, on examination, being found to closely resemble the oil-bearing shales of Duaringa, The Narrows, Miriam Vale, etc.

Catalpa, nr. Maytown, Palmer Goldfield. *Min.Ref.* Gold (alluvial) 3206, (reef) 3678.

—— Mine, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3678.

Catfish Hotel, 21 miles S.W. of Gladstone. *Min.Ref.* Limestone, *see* 672; Marble, 592.

Cathedral Cr. Bore. *See under* Artesian Bores. No. 256.

Cathedral Range, 4 miles E.S.E. of Zillmanton. *Lat.*, 21° 58′ S.; *Long.*, 142° 10′ E. *Min.Ref.* Actinolite, *see* 4860; Cuprite, 2432; Galena, 2791; Magnetite, 5994; Malachite, 6226; Pyrolusite, 7117.

Catherine Bore. *See under* Artesian Bores. No. 132.

—— Reef, Agate Downs Goldfield, Cloncurry. *Min.Ref.* Gold, *see* 3463.

Cat's Eye. *Var. of* Corundum, *which see. Note.*—Very little attention has been paid to the Cat's-eye Corundum at Anakie, but specimens have been found which make very pretty gems.

Cattle Creek, 34 miles W. of Mackay. *Min.Ref.* Coal, *see* 1648.

—— ——. Corella R., Cloncurry. *Min.Ref.* Garnet, *see* 3094; Staurolite, 7599.

—— ——. W.S.W. of Mackay. *Min.Ref.* Azurite, *see* 229A, 229B; Bornite, 429B, 430A; Copper, 1847; Copper Pyrites, 2253A, 2253B; Malachite, 6325A, 6325C.

—— —— (Bingmann's), flows S. into Rawbelle R., W.byS. of Gladstone. *Min.Ref.* Galena, *see* 2731.

—— ——. flows S.S.E. into Broadsound. *Min.Ref.* Coal, *see* 1799.

—— ——. trib. of Vergemont Cr., S.W. of Longreach. *Min.Ref.* Chalk, *see* 567.

—— —— Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 160, 249, 348.

—— —— Road Sub-artesian Bore. *See under* Artesian Bores. No. 240.

—— —— Run, nr. Walloon Stn., 112 miles S. of Rockhampton. *Min.Ref.* Copper, *see* 1849.

—— —— and Walsh R. (junction of), N.W. of Mareeba. *Min.Ref.* Scheelite, *see* 7351.

—— and Wattle Crs. (granite ridges between), Norton Goldfield. *Min.Ref.* Gold, *see* 4295; Iron Pyrites, 5390; Mispickel, 6800.

Cave Cr., nr. Scotland Hills. *Min.Ref.* Jaspopal, *see* 7000.

Cavendish Co. Moreton Dist. *See map*, Pl. 6.

Caves Hotel and Olsen's Caves (between), nr. Mt. Etna. *Min.Ref.* Magnetite, *see* 6046A.

Caves in Queensland. The two principal groups of limestone caves are those at Chillagoe and Mt. Etna. At the former place several caves are known, but only those close to the town have been considered worthy of reservation by the Crown for recreation purposes. The Mt. Etna caves include Johannsen's and Olsen's Caves, both of which are extensive, and contain considerable quantities of bat guano. *See* G.S.Q. Pub. No. 92, pp. 609-613, for general description.

Cawarral (Ross) Cr., 5 miles S. of Emu Park Rail. Stn. *Min.Ref.* Turquoise, *see* 7909.

Cawarral Gold and Mineral Field.

SITUATION: *See maps,* Pls. 2, 3. The township of Cawarral is 23 miles (by rail) N.N.E. of Rockhampton (Yeppoon line). *Co.* Livingstone; *Dist.* Port Curtis. Centre about *Lat.* 23° 10′ S.; *Long.*, 150° 38′ E.

DISCOVERY: Gold was discovered near Cawarral Station in Sept. (?), 1863, and again in this neighbourhood in 1868. In the latter year gold was also found at Mt. Wheeler and New Zealand Gully, both in alluvial deposits, and in reefs. In April, 1870, a gold discovery was made at the Garibaldi Diggings, situated between Tungamull and Cawarral Township.

PROCLAMATION OF FIELD: First gazetted, 19th November, 1869; last, 13th October, 1909, as follows:—Commencing at the confluence of Thorzet Creek with the left bank of the Fitzroy River, and bounded thence by that creek upwards to the south-east corner of portion 22v, parish of Archer; thence by the east boundaries of that portion and portions 152, 153, 154, 155, 9v, and 1v; thence by a line and the east boundary of the parish of Murchison northerly to the south-west corner of portion 1379, parish of Cawarral; thence by the south boundaries of that portion and portion 1381, part of the east boundary of the latter portion and the south boundary of portion 292 to Limestone Creek, by that creek downwards to the south boundary of portion 1563, by the south-east and east boundaries of that portion, the eastern boundaries of portions 389, 1340, 1487, 2367, 2173, and 862, by part of the south, the west, and part of the north boundaries of R. 273, by the western boundary of portion 1431 and a line northerly to the south-west corner of portion 892, by the south and east boundaries of that portion, the east boundary of portion 933 and a line northerly to the south-east corner of portion 2392, parish of Barmoya, by the south-east and east boundaries of that portion, the eastern boundaries of portions 2288 and 1616 northerly to Limestone Creek, by that creek northerly to the west corner of portion 1622, parish of Yeppoon, by the western boundaries of that portion and subdivision 4 of same portion; thence by the north boundary of the parish of Yeppoon easterly to the sea-coast, by the sea-coast southerly to the south-east corner of portion 1717, parish of Yeppoon, by the south boundary of that portion west to a point north from the north-west corner of portion 461, by a line and the west boundary of portion 461 south to its south-west corner; thence by a line north-westerly to the north-east corner of portion 1627; thence by the east boundary of that portion south to its south-east corner; thence by the parish boundary of Hewittville easterly to the sea-coast at Wreck Point, by the sea-coast southerly to the east corner of subdivision C of portion 195, parish of Hewittville, by the south-east boundaries of subdivision C, D, and E of that portion south-westerly to the north corner of portion 196, by the north-east boundary of portion 196 and a line in continuation south-easterly to the northern boundary of R. 320, by part of the north boundary of that reserve and the northern, western, and part of the southern boundaries of R. 274 to the north-west corner of portion 55 by the west boundaries of portions 55 and 54, by the south boundaries of portions 54 and 53 to the sea-coast; thence by the sea-coast southerly to the mouth of the Fitzroy River; and thence by the left bank of that river upwards to the point of commencement.

AREA: 218,880 acres (342 square miles).

PRINCIPAL MINING CENTRES: Cawarral, New Zealand Gully, Mt. Chalmers, Mt. Warminster, and Mt. Wheeler, *which see.*

MINERAL STATISTICS and STATISTICAL NOTES: *See under* Rockhampton.

MINERAL REFERENCES: **Gold** (alluvial) 3393, (nugget) 3447, (reef) 4319-4329, 4339; Silver, 7530, 7531, (Cerargyrite) 1185; Lead (Cerussite), 1299, (Galena) 3059; **Copper** (Azurite) 251, (Chalcotrichite) 2490, (Copper Pyrites) 2298, (Cuprite) 2477, (Malachite) 6364-6365, (Tenorite) 7741; Zinc-Blende, 8201-8203; Manganese-dioxide, 6475; Chromic Ochre, 1472; Chromite, 1482, 1486; Iron (Iron Pyrites) 5399-5404, (Limonite) 5912. Other Minerals: Asbestos, 112; Barytes, 279, 280; Dolomite, 2590; Jasper, 5665, 5666; Magnesite, 5959; Serpentine, 7393, 7395; Steatite, 7695; Tourmaline, 7870.

GEOLOGICAL NOTE: The rocks about the field comprise altered sedimentaries in association with serpentine, diorite, and other intrusive rocks. Mineral deposits containing gold, copper, and other metals occur as reefs and as massive lode formations in the altered sedimentary rocks. *See* G.S.Q. Pub. No. 216 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 22 (1886), 216 (1907). *See under* Geol. Sur. Pub. List for title. *See also* Supplementary Report List, No. 6, 66.

WARDEN AND INSPECTOR OF MINES: Both stationed at Rockhampton.

REPORTS: Inspector's and Warden's monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Cawildi Bore. *See under* Artesian Bores. No. 397.

Celestial Extd. M.C. (195), Cloncurry. *Min.Ref* Azurite, *see* 160; Copper Pyrites, 2073; Malachite, 6100; Tile Ore, 2500.

Celestine. *Syn.* Celestite. *Compo.*, Sulphate of strontia. *Colour,* Usually white or faint bluish. *H.* = 3—3·5. *Sp.gr.* = 3·9. *Lustre,* Vitreous. Very brittle. *Contents* (*max.*), Strontia 56 per cent.

1176. ——. In calcite. Kawataria, Kiriwina, 272 miles E.byN. of Port Moresby, Brit. New Guinea.

Celestite. *Syn.* Celestine, *which see.*

C.D. Roe Reef, Flanagan's, Croydon Goldfield. *Min.Ref.* Galena, *see* 2709A; Gold, 3501; Iron Pyrites, 4945; Zinc-Blende, 8060.

Cement Hill, Clermont Goldfield. Discovered in 1865. *Min.Ref.* Gold (alluvial), *see* 3339, 3347.

GEOLOGICAL NOTE: The hill consists of schists, slates, and conglomerates, on which there rests 4 or 5 feet of auriferous cement "wash." The wash is Permo-Carboniferous and contains the fossil fern *Glossopteris.* Both the "wash" and the slates and schists are in places covered by a flow of basalt. *See* G.S.Q. Pub. Nos. 176, 201, for details and maps.

Cement-making Materials. *See* Limestone, Gypsum. NOTE: Investigations made regarding the occurrence of Portland cement-making ingredients show that there are many places in the State where abundance of limestone is to be found near existing railway lines. Coal also occurs in innumerable places, but the two, coal and limestone, have not been found close together. The Maryborough district, with its limestone and coal resources, offers special inducements for the establishment of the cement-making industry, and the Gladstone district, too, has advantages in this respect. Limestone deposits at Tamaree and Gympie, with coal at Gunalda, Gundiah, only a few miles further north, and limestone deposits near Warwick, with coal at Allora, are also worthy of attention. *See* Progress Report of Q. Geol. Survey, in A.R.D.M. for 1911, for short account of localities where limestone and coal deposits are known to occur.

Centipede Group of Copper Mines, Cloncurry. Includes Centipede, Coolullah, Emerald Hill, and Pooncairie M. Leases. *Min.Ref.* Bornite, *see* 415; Copper Pyrites, 2104; Limonite, 5805; Malachite, 6163.

Centipede M.L. (375), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2104; Bornite, 415; Limonite, 5805; Malachite, 6163.

Central Bore. *See under* Artesian Bores. No. 391.

Central Cr., trib. of Tomahawk Cr., N.W. of Anakie. *Min.Ref.* Amethyst, *see* 7170; Cairngorm, 7181; Chalcedony, 1350A; Gold (alluvial), 3361; Hornblende, 4838; Ilmenite, 4902; Jasper, 5643; Magnesite, 5951; Magnetite, 6029; Rutile, 7335; Sapphire, 2355; Spinel, 7581; Topaz, 7806; Tourmaline, 7864; Zircon, 8236.

—— Lode (Sel. 2447), Kilkivan. *Min.Ref.* Cinnabar, *see* 1551.

—— Mine, Mt. Victoria, W.S.W. of Mt. Morgan. *Min.Ref.* Gold, *see* 4372.

Central Queensland Coal Fields. Include the following mines and mining centres:— Blackwater, Bluff, Clermont, Columba, Dawson, Dunstan, Frenchman's Plains, Jellinbah, Mammoth, Port Clinton, Stanley, Stanwell, Styx, Tolmies, and Walleroo, each of which *see.*

—— —— Coal Mines, Notes on. *See under* Gov. Ming. Jour. Reports, Nos. 39, 52, 62. *See also* A.R.D.M., p. 163 (1905).

—— —— and 1 N.E. Gold Mines, Ulam Goldfield. *Min.Ref.* Gold, *see* 4298, 4299; Iron Pyrites, 5392.

—— Railway Bores. *See under* Artesian Bores. Nos. 65-72.

Cerargyrite. *Syn.* Kerargyrite, Horn Silver. *Compo.*, Chloride of silver. *Colour,* Usually dull greyish or greenish. Resinous. *Streak,* shining. Cuts like horn. *H.* = 1—1·5. *Sp.gr.* = 5·5. *Contents* (*max.*), Silver 75 per cent.

1177. ——. *Assoc.with* Native Silver. *Loc.* Croydon Queen No. 2 South Mine, Croydon Goldfield, 94 miles (by rail) S.E. of Normanton. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

1178. ——. Irvinebank, 10 miles S.W. of Stannary Hills Rail. Stn., 12 miles W.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* L.B. 1, p. 632 (1884).

1179. ——. Lady Jane Mine, Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

1180. Cerargyrite. *Assoc.with* Galena. *Loc.* Montalbion (*ante*). *Assay:* Silver = 75 per cent. *Ref.* P.R.S.Q., vol. 4, p. 55 (1887).

1181. ——. Albion Mine, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills (Chillagoe Br. Rail.), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M.

1182. ——. Mines at Lappa Junction, 102 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 50 (1900).

1183. ——. Muldiva Silver-Lead Mine, 6 miles S.W.byS. of Almaden (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 50 (1900).

1183A. ——. *Assoc.with* Gold. *Loc.* Old Silver Mine, One-mile, Ravenswood Goldfield. *Co.* Gladstone; *Dist.* **Kennedy North.** *Ref.* B.D.

1184. ——. Struck Oil Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* L.B. 2, p. 139 (1880).

1185. ——. *Assoc.with* Gold. *Loc.* Last Chance Reef, New Zealand Gully, 15 miles (by rail) E.N.E. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* P.R.S.Q., vol. 4, p. 40 (1887).

Cerium. (*Ce*). *Atom.Wt.* 140·25. *Sp.gr.* 6·73. *Colour*, grey, metallic. Ductile.

Uses: The metal itself has no industrial application, but the oxide is one of the ingredients composing the fabric of incandescent gas mantles. Monazite is the common source of cerium, and is the only mineral known to contain it in Queensland. Some doubt exists as to whether the cerium-bearing mineral in the beach sands on the coast is actually monazite, the tests not being conclusive.

Cerium-lanthanum-thorium phosphate. *See* Monazite.

Certificates for Mining Managers. *See under* Board of Examiners for Mining Managers.

—— for Engine Drivers. *See under* Inspection of Machinery and Scaffolding Act.

Cerussite. *Syn.* White Lead Ore. *Compo.* Carbonate of Lead. *Colour*, usually white. *Lustre*, inclining to vitreous or resinous. Very brittle. *H.* = 3-3·5. *Sp.gr.* = 6·4. *Contents* (*max.*), Lead 77 per cent.

1185A. ——. *Assoc.with* Galena in lode. *Loc.* Lilydale Mine, Lawn Hills, Mended Hill, 92 miles S.W. of Burketown. *Co.* Gregory; *Dist.* **Burke.** Yield of Carbonate Ore: Silver = 7 oz. per ton; Lead = 70 per cent. *Ref.* G.S.Q. Pubs. 138, p. (1900), and 232, p. 44 (1911).

1186. ——. *Assoc.with* Galena and Zinc-Blende, in lode. *Loc.* Mended Hill Mine, Lawn Hills (*ante*). *Yield of Ore:* Silver = 29 to 34 oz. per ton; Lead = 69 to 76 per cent. *Ref.* G.S.Q. Pubs. 138, p. 2 (1900), and 232, p. 45 (1911).

1187. ——. *Assoc.with* Gold, Iron Pyrites, Redruthite, Chalcotrichite, and Galena, in quartz. *Loc.* Mountain Maid Reef, 2¾ miles N.N.E of Croydon, 96¾ miles (by rail and road) S.E. of Normanton, Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* B.D.

1187A. ——. *Assoc.with* Gold, Pyromorphite, and Ironstone, in quartz. *Loc.* Federation Reef, Tabletop, 9 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

1188. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Pyromorphite, and Massicot. *Loc.* In the reefs at Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 34 (1896).

1188A. ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Jenny Lind Reef, Lower Twelve-mile, 8 miles N. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 34 (1896).

1188B. ——. *Assoc.with* Gold, Galena, and Massicot, in lode. *Loc.* Boulder Hill, Broken Hill, and Granite Castle Silver-Lead Lodes, Flinders R., Por. 2, Par. of Cracknell, Mt. Emu Plains Stn., 62 miles N.N.E. of Hughenden, 55 miles N.W.byW. of Pentland Rail. Stn. (Northern line). *Co.* Wongalee; *Dist.* Burke. *Assays: See* Refs. *Ref.* Q.G.M.J., vol. 11, p. 136 (1910), and A.R., p. 257 (1910).

1188C. ——. *Assoc.with* Galena, Anglesite, Massicot, Malachite, Azurite, and Limonite, in lode. *Loc.* about 5 miles S. of Coalstoun Lakes, 16 miles S.W. of Biggenden Rail. Stn. (Gayndah line). *Co.* Mackenzie; *Dist.* **Burnett.** *Refs.* A.R., pp. 287, 288, 291 (1910).

1189. ——. *Assoc.with* Anglesite and Galena, in red gossan. *Loc.* Spring Cr., br. of Blackfellow's Cr., trib. of Lynd R., 12 miles W. of Fossilbrook (Chillagoe line), 45 miles S.W. of Almaden Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

1189A.——. *Assoc.with* Massicot, Anglesite, and Malachite, in lode. *Loc.* Popahrairie P.A., Fiery Cr., about 15 miles N.byW. of Georgetown, Etheridge Goldfield. *Co.* Einasleigh; *Dist.* Cook. *Ref.* A.R., p. 194 (1909).

1189A1.——. *Assoc.with* Galena and Anglesite. *Loc.* P.A., between Aurora Cr. and Rocky, about 8 miles S.W. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* A.R., p. 242 (1910).

1190. ——. *Assoc.with* Silver and Anglesite, in lode. *Loc.* Mt. Dee Valley, Castleton, 5 miles S.S.E. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* A.R., p. 200 (1909).

1190A.——. *Assoc.with* Silver, Copper Pyrites, Galena, and Limonite, in lode. *Loc.* Mt. Dee Vall Mine, Charleston, 144 miles (by rail) S.W. of Almaden Rail. Stn., (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* O.R.

1190B. ——. *Assoc.with* Silver, Galena, Anglesite, and Malachite, in quartz. *Loc.* Wright's Leader, Donnyville, 4½ miles S. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* A.R., p. 228 (1910).

1190C.——. *Assoc.with* Copper Carbonate and Magnetite, in schist. *Loc.* Lynd Copper Mine, Einasleigh R., 32 miles E.N.E. of Charleston, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 134, p. 21 (1898).

1190D. ——. *Assoc.wtih* Gold, Galena, Massicot, and Malachite, in quartz and schist. *Loc.* Ancient Briton Mine, Georgetown, Etheridge Goldfield (*ante*). *Ref.* A.R., p. 215 (1910).

1190E.——. *Assoc.with* Gold, Silver, Galena, Massicot, and Anglesite, in lode. *Loc.* 1 mile N. of International Mine, Rocky, 6 miles S.W.byS. of Georgetown, Etheridge Goldfield (*ante*). *Assays: See* No. 2757A. *Ref.* A.R., p. 228 (1910).

1191. ——. Vulcan Tin Mine, Irvinebank, 12 miles W.S.W. of Herberton, 10 miles S.W. of Stannary Hills, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

1192. ——. *Assoc.with* Anglesite. *Loc.* Irvinebank (*ante*). *Ref.* G.S.M.

1193. ——. Montalbion, 7 miles S.W. of Stannary Hills, Chillagoe br. Rail., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M.

1194. ——. *Assoc.with* Silver and Malachite, in quartz. *Loc.* Otho Lease, Chillagoe, 139 miles W.S.W. of Cairns, Cairns Chillagoe Rail., Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay:* Silver = 100 oz. per ton. *Ref.* G.S.Q. Pub. 133, p. 10 (1898).

1194A.——. *Assoc.with* Galena and Massicot, in lode. *Loc.* Dolly Brand Mine, 1 mile from Chillagoe, Walsh and Tinaroo Mineral Fields (*ante*). *Assay: See* No. 2790A. *Ref.* A.R., p. 318 (1911).

1194B.——. Christmas Gift Mine, Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Analyses* (2): Lead = 72·5 and 53·7 per cent.; Silver = 10 oz. and 8 oz. per ton. *Ref.* Q.G.M. Jour., vol. 13, p. 56 (1912).

1195. ——. *Assoc.with* Minium, in lode of gossan. *Loc.* Arbouin and Party's P.A., Dargalong, 7 miles S. of Zillmanton Rail. Stn., Chillagoe line, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

1196. ——. *Assoc.with* Galena, Massicot, and Anglesite, in talcose gossan. *Loc.* Ewan and Delaney's P.A., Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

1197. ——. *Assoc.with* Minium, Anglesite, and Hematite. *Loc.* Excelsior Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

1198. ——. *Assoc.with* Minium and Copper Carbonate, in lode. *Loc.* Johnson and Smith's Claim, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

1198A.——. *Assoc.with* Galena and Minium, in ferruginous clay. *Loc.* P.A. (40 acres), Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

1199. ——. *Assoc.with* Galena, Minium, Anglesite, Massicot, and Copper Carbonate. *Loc.* Pandora Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

1200. ——. *Assoc.with* Anglesite and Ironstone, in purple gossan. *Loc.* Quetta or Skardon's Mine, Dargalong (*ante*). *Assay:* Silver = 74 oz. per ton; Lead = 19·12; Silica 4·17 per cent. *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

1201. ——. *Assoc.with* Minium. *Loc.* Silver Crown Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

1202. ——. *Assoc.with* Galena. *Loc.* Lappa Lappa, 102 miles S.W. of Cairns, Cairns-Chillagoe Rail., Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

1203. Cerussite. *Assoc.with* Galena, Malachite, Tetrahedrite, and Zinc-Blende, in lode *Loc.* Eclipse Mine, Muldiva, 7 miles W.S.W. of Almaden, Chillagoe Rail., Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Silver = up to 400 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

1204. ——. Paisley Silver Mine, Muldiva (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

1205. ——. *Assoc.with* Atacamite and Azurite. *Loc.* Silver Lead Mines, Muldiva (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 51 (1900).

1206. ——. *Assoc.with* Galena, Malachite, Cuprite, and Ironstone, in clay and quartz. *Loc.* Girofla Mine, Opera Cr., Mungana, 149 miles W.S.W. of Cairns, Cairns-Chillagoe Rail., Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay:* Silver = 5 to 8 oz. per ton; Lead = 23 to 71 per cent.; Copper = 0 to 35 per cent. *Ref.* G.S.Q. Pub 69, p. 3 (1891), and B.D.

1207. ——. *Assoc.with* Hematite and Limonite. *Loc.* Girofla Mine, Opera Cr., Mungana (*ante*). *Ref.* G.S.Q. Pub. 134, p. 12 (1898).

1208. ——. *Assoc.with* Garnet Rock. *Loc.* Lady Jane Mine, 1 mile S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

1209. ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Galena, Minium, Zinc-Blende, Hematite, and Garnet. *Loc.* Penzance Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Silver = 26 oz. per ton; Lead = 28·2 per cent.; Copper = 1·31 per cent. *Ref.* G.S.Q. Pubs. 69, p. 6 (1891), and 134, p. 11 (1898).

1210. ——. *Assoc.with* Copper Pyrites, Azurite, and Malachite, in lode. *Loc.* Queenslander Copper Lease, Redcap Cr., 3 miles N.E. of Mungana (*ante*). *Ref.* G.S.Q. Pub. 134, p. 11 (1898).

1211. ——. *Assoc.with* Galena and Minium, in limestone. *Loc.* Queenslander Copper Lease (*ante*). *Assay:* Silver = 30 to 200 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

1212. ——. *Assoc.with* Galena, Massicot, Anglesite, Manganese-dioxide, and Actinolite. *Loc.* Macrossan Mine, between Cathedral Range and Arbinjoe Cr., 2 miles E. of Chillagoe, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay: See* No. 28. *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

1213. ——. *Assoc.with* Gold and Galena, in quartz leader. *Loc.* Avis's Lease, Oaks Goldfield, 22 miles S.byE. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy; *Dist.* Cook. *Ref.* A.R., p. 156 (1908).

1213A. ——. *Assoc.with* Galena, Massicot, Iron Pyrites, Mispickel, and Zinc-Blende, in lode. *Loc.* Chillagoe Mine, off Wises's Nob, Oaks Goldfield (*ante*). *Ref.* A.R., p. 187 (1909).

1214. ——. *Assoc.with* Redruthite and Copper Carbonate, in gneiss and basalt. *Loc.* Between Brooklands No. 2 and No. 3, Junction Cr., br. Einasleigh R., 30 miles S. of Fossilbrook. *Co.* Tate; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 20 (1898).

1215. ——. In siliceous lode. Einasleigh R., between Junction Cr. and Herberton Georgetown road. *Co.* Tate (*ante*). *Ref.* G.S.Q. Pub. 134, p. 20 (1898).

1216. ——. *Assoc.with* Minium, Limonite, and Copper Carbonate, in lode in slate, greywacke, and quartzite. *Loc.* Monte Video Mine, nr. Ashton and Bowler Cr., 3 miles E. of Astonville, 15 miles N.N.W. of Mungana, Chillagoe Rail., Walsh and Tinaroo Mineral Fields. *Co.* Wrotham; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 15 (1898).

1216A.——. *Assoc.with* Cuprite, Tetrahedrite, Azurite, Malachite, and Ironstone, in lodes. *Loc.* Tartana Hill, Bowler Cr., Ashtonville (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 15 and 16 (1898).

1216B.——. *Assoc.with* Silver and Galena. *Loc.* Macdonald Goldfield, 31 miles W.byS. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.**

1217. ——. *Assoc.with* Galena, Anglesite, Redruthite, and Copper Carbonate, in gossan. *Loc.* Silver King Mine, Texas, 3 miles N. of Silver Spur Mine, 43 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* B.D.

1218. ——. *Assoc.with* Gold, Pyrargyrite, Iron Pyrites, Galena, Cuprite, Tile Ore, Copper Pyrites, Malachite, Azurite, Zinc-Blende, Smithsonite, Ironstone, and Calcite, in lode. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe (*ante*). *Ref.* G.S.Q. Pubs. 120 (1898), and p. 191 (1904).

1219. ——. *Assoc.with* Galena, Massicot, and Linarite, in lode. *Loc.* Caledonia Mine, Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

1220. ——. *Assoc.with* Galena, Massicot, Carbonate of Copper, and Ironstone, in quartz. *Loc.* Silver Streak Mine, Dry River (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883), and G.S.M.

1220A.——. *Assoc.with* Galena, in blow of red gossan. *Loc.* Spring Cr., on Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

1221. ——. *Assoc.with* Galena and Massicot. *Loc.* Target Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

1222. ——. *Assoc.with* Galena, in lode. *Loc.* Target 1 E. Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

1223. ——. *Assoc.with* Galena and Massicot. *Loc.* White Star Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

1224. ——. *Assoc.with* Gold, Silver, Minium, Iron Pyrites, Hematite, Magnetite, Copper Pyrites, Cuprite, Bornite, Tenorite, Azurite, Malachite, Chalcanthite, Mispickel, and Zinc-Blende, in quartz lodes, in quartzite and porphyry. *Loc.* Mt. Garnet Mines, Return Cr., br. of Wild R., 136 miles S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

1225. ——. *Assoc.with* Galena, Iron Pyrites, Copper Pyrites, and Zinc-Blende, in slate and volcanic tuffs. *Loc.* Lancelot Mines, Newellton (Silver Valley), 9 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* L.B. 1, p. 479 (1883), and P.R.S.Q., vol. 4, p. 75 (1887).

1226. ——. *Assoc.with* Gold, Silver, Anglesite, and Massicot, in lode. *Loc.* nr. Bluff Stn., 9 miles S.E. of Mt. Leyshon, 22 miles S.S.E. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* A.R., p. 260 (1910).

1226A.——. *Assoc.with* Silver and Galena. *Loc.* nr. Chinaman's Gully, about 2½ miles E. of Mt. Leyshon, about 16 miles S.byE. of Charters Towers. *Co.* Davenport (*ante*). *Assay:* Silver = 72 oz.; Lead = 65·2 per cent. *Ref.* A.R., p. 229 (1910).

1226B.——. *Assoc.with* Gold, Silver, Galena, and Limonite, in lode. *Loc.* ¾ mile E. of Mt. Leyshon, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

1226C.——. *Assoc.with* Gold; Silver, Galena, Anglesite, and Massicot, in lode. *Loc.* Right hand br. of One-mile Gully, 1½ miles S.E. of Mt. Leyshon. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

1227. ——. *Assoc.with* Galena. *Loc.* Esperanza Silver Mine, Ravenswood Goldfield, 78 miles (by rail) S. of Townsville, Northern Rail. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

1228. ——. *Assoc.with* Gold, Silver, and Galena, in quartz. *Loc.* Ravenswood Silver Mg. Co's Mine, Ravenswood Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 47 (1887), and G.S.Q. Pub. 125, p. 34 (1897).

1229. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Star of the South Reef, Connolly Cr., Trieste, 12 miles S.W.byS. of Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 10 (1900), and G.S.M.

1230. ——. *Assoc.with* Galena, in quartz lode. *Loc.* N. side of Specimen Cr., Mt. Remarkable, 6 miles W.byN. of Pentland Rail. Stn. (Gt. Northern line), Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Assays:* (1) Silver = 6 oz. per ton; Lead = 73 per cent.; (2) Silver = 4 oz. per ton; Lead = 48·75 per cent. *Ref.* G.S.Q. Pub. 93, p. 5 (1891).

1230A.——. *Assoc.with* Galena and Anglesite, in quartz lode. *Loc.* Valley of Lagoons Run, 6 miles E. of Wyandotte Tel. Stn., about 64 miles S.E.byE. of Mt. Surprise Rail. Stn. (Etheridge line). *Co.* Gunawarra; *Dist.* Kennedy North. *Ref.* A.R., p. 176 (1909).

1231. ——. *Assoc.with* Copper Carbonate, in kaolin. *Loc.* Stockyard Cr. Silver Mine, Stockyard Cr., Basalt R., 18 miles N.W. of Hillgrove Hd. Stn., 70 miles N.N.W. of Charters Towers. *Co.* O'Connell; *Dist.* Kennedy North. *Assays:* Silver = from 3 oz. to 966 oz. per ton; Copper = from 8 to 31 per cent. *Ref.* G.S.Q. Pub. 94, p. 13 (1893).

1232. ——. *Assoc.with* Copper Pyrites and Malachite. *Loc.* Alice Shaft, **Kangaroo Hills Mineral Field**, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M.

1233. ——. *Assoc.with* Galena, Copper Carbonate, Chrysocolla, Manganese-dioxide, and Garnet, in quartz lode. *Loc.* Black Star Lease (116), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, pp. 5 and 6 (1892).

1234. ——. *Assoc.with* Galena, Bornite, and Copper Carbonate, in lode. *Loc.* Blue Bell Lease (226), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

1235. Cerussite. *Assoc.with* Galena, Malachite, Azurite, and Manganese-dioxide, in lode. *Loc.* Bonnybrook Lease (178), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), and 82, p. 4 (1892).

1236. ——. *Assoc.with* Lievrite, Manganese-dioxide, and Garnet, in quartz lode. *Loc.* Boomerang Lease (186), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

1237. ——. In chlorite and quartz. Caledonian Lease (174), Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 46 oz. per ton; Lead = 30·5 per cent.; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 9 (1892).

1238. ——. *Assoc.with* Lievrite, in lode. *Loc.* Day Dawn Lease 170, Newton's Shaft, Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver = 57 oz. per ton; Lead = 67·5 per cent.; (2) Silver = 4 oz. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 4 (1892).

1239. ——. *Assoc.with* Galena and traces of Gold, in lode. *Loc.* Day Dawn Lease 170, Regner and Nevan's Hole, Kangaroo Hills Mineral Field (*ante*). *Assay:* Copper = 41·1; Lead = 29·5 per cent.; Silver = 17 dwt. 23 gr. per ton. *Ref.* G.S.Q. Pub. 82, p. 4 (1892).

1240. ——. *Assoc.with* Galena, Malachite, Azurite, and Manganese-dioxide, in lode. *Loc.* Donnybrook Lease, Running R., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

1241. ——. *Assoc.with* Native Silver, Galena, Malachite, Chrysocolla, Manganese-dioxide, Hematite, Mispickel, Zinc-Blende, and Chlorite, in kaolin lode. *Loc.* Hidden Treasure Lease (165), Running R., 1¾ miles W.S.W. of Ewan, Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver = 314 oz. per ton; Lead = 19 per cent.; (2) Silver = 3 oz. 10 gr. per ton; Lead = 38 per cent.; (3) Silver = 45 oz. 14 dwt. per ton; Lead = 16·1 per cent. *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), and 82, p. 7 (1892).

1242. ——. *Assoc.with* Galena, Manganese-dioxide, and Ironstone, in chlorite lode and in limestone. *Loc.* Hidden Treasure Lease (166), Running R., Kangaroo Hills Mineral Field (*ante*). *Assays: See* No. 2966. *Ref.* G.S.Q. Pub. 82, pp. 6, 7 (1892).

1243. ——. *Assoc.with* Ironstone and Copper Carbonate, in gossan and kaolinic lode. *Loc.* Junction Lease (181), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1897).

1244. ——. *Assoc.with* Copper Carbonate and Ironstone, in garnetiferous lode. *Loc.* Junction South Lease (180), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

1245. ——. *Assoc.with* Ironstone, in quartz lode. *Loc.* Kairanga Lease (217), 1 mile W. of Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

1246. ——. *Assoc.with* Galena, Copper Carbonate, and Hematite, in gossan. *Loc.* Mt. Brown Lease (183), Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 17 dwt. 23 gr. per ton; Lead = 11·5 per cent. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

1247. ——. In chlorite rock. New Chum Mine, Butterfly Gully, Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.M.

1248. ——. *Assoc.with* Galena, Minium, Chrysocolla, Copper Carbonate, Hematite, and Zinc-Blende, in gossan lode. *Loc.* White Wings P.A., Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

1249. ——. *Assoc.with* Galena, Malachite, Chrysocolla, Manganese-dioxide, Lievrite, and Garnet, in kaolin. *Loc.* Mt. Hishon Lease (210), Kangaroo Hills Mineral Field (*ante*). *Assay: See* No. 2969. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

1250. ——. *Assoc.with* Galena, in quartz and garnet rock. *Loc.* Mt. Hishon 1 E. Lease (224), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

1251. ——. *Assoc.with* Copper (native), Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper Carbonate, Linarite, Manganese-dioxide, Zinc-Blende, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

1252. ——. *Assoc.with* Galena, Chrysocolla, Pyrolusite, Gypsum, and Calcite, in garnet rock. *Loc.* Elsie's Shaft, Mt. Moss Lease (168), Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 16 oz.; Lead = 69·8 per cent.; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

1253. ——. *Assoc.with* Minium, in lode. *Loc.* Mt. Moss Extended Lease (169), Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver = 14 oz. per ton; Lead = 44·7 per cent.; Gold = trace; (2) Silver = 14 oz.; Lead = 62·5 per cent.; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 4 (1892).

1254. ——. *Assoc.with* Malachite. *Loc.* Pinnacle Mine, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.M.

1255. ——. *Assoc.with* Manganese-dioxide, in lode. *Loc.* Red Rover Lease (179), Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 4 oz. per ton; Lead = 31·1 per cent.; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 4 (1892).

1256. ——. *Assoc.with* Ironstone and Copper Carbonate, in lodes. *Loc.* Running River Lease (163), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 4 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

1257. ——. *Assoc.with* Copper Pyrites, Bornite, Tile Ore, Galena, Mispickel, and Hematite, in lode. *Loc.* Wallaroo Lease (162), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

1258. ——. *Assoc.with* Ironstone, Manganese-dioxide, and Copper Carbonate, in quartz lode. *Loc.* White Star Lease (160), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

1259. ——. *Assoc.with* Galena, Anglesite, Linarite, Minium, and Pyromorphite, in lode. *Loc.* Alpha Silver Mine, **Star R.** (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Assays:* (1) Silver = 107 oz. per ton.; Lead = 79 per cent.; (2) Silver = 5 oz. per ton; Lead = 20 per cent. *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

1260. ——. Beazley's Tunnel, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.M.

1261. ——. *Assoc.with* Minium, in lode. *Loc.* Ben Lomond Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay:* Silver = 234 oz. per ton; Lead = 27 per cent. *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

1262. ——. *Assoc.with* Minium, Anglesite, Massicot, and Ironstone. *Loc.* Bonanza Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

1263. ——. *Assoc.with* Mispickel. *Loc.* Bowden and Co's Sel. (147), Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

1264. ——. *Assoc.with* Minium. *Loc.* Cleopatra Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

1265. ——. *Assoc.with* Galena, Minium, Copper Pyrites, Malachite, Manganese-dioxide, Mispickel, Ironstone, and Iron Ochre. *Loc.* Colorado Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 7 (1886).

1266. ——. *Assoc.with* Minium and Galena, in ferruginous lode. *Loc.* Crœsus Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

1267. ——. *Assoc.with* Minium, Anglesite, and Ironstone, in ferruginous lode. *Loc.* Eureka Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

1268. ——. *Assoc.with* Lead Ochre and Ironstone, in lode. *Loc.* Excelsior Silver Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

1269. ——. *Assoc.with* Minium and Anglesite, in lode. *Loc.* Humphrey and Co.'s Silver Sel. (172), Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

1270. ——. *Assoc.with* Galena, Minium, Massicot, and Ironstone. *Loc.* John Bull Mine, Star R. (Argentine) Silver Field (*ante*). *Assay: See* No. 2986. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

1271. ——. *Assoc.with* Minium and Ironstone, in lode. *Loc.* Jones's Sel. 139, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

1272. ——. *Assoc.with* Anglesite and Minium. *Loc.* Lady Annie Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay:* Silver = 307 oz. per ton; Lead = 67 per cent. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

1273. ——. *Assoc.with* Minium, Lead, Gossan, and Ironstone, in lode. *Loc.* Morison's Sels. (165 and 166), Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

1274. ——. *Assoc.with* Minium and Galena, in lode. *Loc.* Nonpareil Silver-Lead Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 26 (1886).

1275. ——. *Assoc.with* Minium and Anglesite, in lode. *Loc.* Northbrook Mine, Beazley's Sel. (178), Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

1276. Cerussite. *Assoc.with* Minium, Galena, and Ironstone, in schistose rock. *Loc.* Overlander Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay:* Silver = 150 oz. per ton; Lead = 65 per cent. *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

1277. ——. *Assoc.with* Minium, in gossan. *Loc.* P.F. Hannan Silver-Lead Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

1278. ——. *Assoc.with* Galena and Minium, in lode. Prince of Wales Silver-Lead Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

1279. ——. *Assoc.with* Minium and Malachite, in gossan lode. *Loc.* Royal Standard Silver Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

1280. ——. *Assoc.with* Galena and Massicot, in lode. *Loc.* Silver Sel. (169), Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

1281. ——. *Assoc.with* Galena, Minium, Anglesite, and Ironstone. *Loc.* St. John's Silver-Lead Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

1281A.——. *Assoc.with* Siderite, Pyrolusite, and Ironstone. *Loc.* Struck Oil Freehold, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886), and L.B. 1, p. 888 (1887).

1282. ——. *Assoc.with* Galena, Minium, and Anglesite, in ferruginous lode. *Loc.* True Blue Silver-Lead Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay:* Lead = 72 per cent.; Silver = 68 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

1283. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Anglesite, Minium, Siderite, and Zinc-Blende, in gossan. *Loc.* Union Silver Mine, Star R. (Argetine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

1284. ——. *Assoc.with* Galena, Anglesite, and Minium, in lode. *Loc.* Venture Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay:* Silver = 82 oz. per ton; Lead = 68 per cent. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

1285. ——. *Assoc.with* Galena, Anglesite, Minium, Massicot, and Ironstone. *Loc.* Washington 1 and 2 Silver Mines, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

1286. ——. *Assoc.with* Galena, Copper Pyrites, Iron Pyrites, Azurite, Malachite, Mispickel, and Zinc-Blende, in lode outcrop. *Loc.* Mt. Barker Silver Mine, 3 miles N. of Eungella Stn., 33 miles W. of Mirani Rail.-Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pubs. 54, p. 3 (1889), and 181, pp. 12-17 (1903).

1287. ——. *Assoc.with* Minium and Mispickel, in quartz lode. *Loc.* Long Hill Gold and Silver Mine, Spur of Coast Range, Scrubby Cr., 9 miles S. of Mackay. *Co.* Carlisle (*ante*). *Assays:* (1) Lead = 42 per cent.; Silver = 19 oz. per ton; (2) Lead = 6 per cent.; Silver = 5 oz. per ton; (3) Silver = 28 oz.; Gold = 7 dwt. per ton. *Ref.* G.S.Q. Pub. 39, p. 10 (1887).

1287A.——. *Assoc.with* Silver, Galena, and Anglesite, in lode. *Loc.* Black Cr., br. of Police Cr., about 30 miles S.byE. of Mt. Wyatt Goldfield. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* A.R., p. 221 (1910).

1288. ——. *Assoc.with* Galena, Iron Pyrites, and Zinc-Blende, in lode. *Loc.* Bonnie Dundee Mine, Sellheim Mineral Field, 92 miles S.W.byS of Bowen. *Co.* Sellheim (*ante*). *Assays:* (1) Lead = 43·89 per cent.; Silver = 38 oz. per ton; (2) Lead = 44·85 per cent.; Silver = 37 oz. per ton; Gold = trace. *Ref.* G.S.Q, Pub. 57, p. 6 (1889).

1289. ——. *Assoc.with* Galena, Minium, Copper Pyrites, Iron Pyrites, Zinc-Blende, and Clay, in lode. *Loc.* General Gordon Mine, Sellheim Mineral Field (*ante*). *Assays:* (1) Lead = 54·96 per cent.; Silver = 45 oz. per ton; Gold = trace; (2) Lead = 41·91 per cent.; Silver = 43 oz. per ton. *Ref.* G.S.Q. Pub. 57, p. 6 (1889).

1290. ——. *Assoc.with* Galena, Minium, and Clay, in lode. *Loc.* New Year's Gift Mine, Two-mile Cr., Sellheim Mineral Field (*ante*). *Assays:* Silver = 244 oz. per ton; Lead = 34·61 per cent.; Gold = trace. *Ref.* G.S.Q. Pub. 37, p. 7 (1889).

1291. ——. *Assoc.with* Galena, Anglesite, Minium, Iron Pyrites, Ironstone, and Zinc-Blende, in lode. *Loc.* Pyramid Mine, Sellheim Mineral Field (*ante*). *Assays:* Silver = 71 oz. per ton; Lead = 58·45 per cent. *Ref.* G.S.Q. Pub. 57, p. 3 (1889).

1292. ——. *Assoc.with* Silver, Galena, Minium, Iron Pyrites, Ironstone, and Zinc-Blende, in lode. *Loc.* Rob Roy Mine, Sellheim Mineral Field (*ante*). *Assays:* *See* No. 3017. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

1293. ——. *Assoc.with* Silver, Galena, and Minium, in lode. Silver King Mine, Sellheim Mineral Field (*ante*). *Assays:* Lead = 61·86 per cent.; Silver = 40 oz. 16 dwt. 18 gr. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

1294. ——. *Assoc.with* Galena and Minium, in quartz lode in sandstone. *Loc.* E. of Mt. Clarke, Mt. Britton Goldfield, 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* **Leichhardt.** *Assay:* Silver = 130 oz. per ton. *Ref.* G.S.Q. Pub. 39, p. 6 (1887).

1295. ——. *Assoc.with* Gold. Iron Pyrites, Massicot, Cassiterite, Bismuth, and Calcite, in kaolinised greisen. *Loc.* Snowdrop P.A., Mt. Langan, Emu Cr., 14½ miles W.N.W. of Kannungar, Brisbane-Valley Rail. Line. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* L.C.B.

1296. ——. *Assoc.with* Massicot, Iron Pyrites, Mispickel, Wolfram, and Scorodite. *Loc.* Plant's Leasehold, 4 miles E. of Crow's Nest, 38 miles (by rail and road) N.N.E. of Toowoomba. *Co.* Cavendish; *Dist.* Moreton. *Ref.* A.R., pp. 148-149 (1908).

1297. ——. *Assoc.with* Gold, Silver, Minium, Massicot, Anglesite, Galena, Hematite, and Limonite, in lode. *Loc.* Bompa Silver-Lead Mine, Glassford Cr., 2 miles W.ofS. of Littlemore Rail. Stn. (Boyne Valley line), 53 miles (by rail and road) S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 159, p. 7 (1901).

1298. ——. *Assoc.with* Pyromorphite and Altaite, in quartz. Five miles from Maxwelton, 40 miles S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* O.R.

1299. ——. *Assoc.with* Silver, Cuprite, Tenorite, Malachite, Iron Pyrites, Barytes, and Zinc-Blende, in serpentinous shales. *Loc.* Mt. Warminster Copper-Lead Mine, nr. Mt. Chalmers, 20 miles (by rail) N.E. of Rockhampton, Central Rail., Cawarral Goldfield. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* B.D.

1300. ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Magpie Lode, Carmilla Mine, Connor's Range, 32 miles N.N.W. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Assay:* Gold = 1 dwt. 15 gr. per ton; Silver = 9 oz. 5 dwt. 5 gr. per ton. *Ref.* G.S.Q. Pub. 141, p. 5 (1898).

Cervantite. *Compo.* Oxide of Antimony. *Colour,* usually yellowish. *Lustre,* greasy. *Streak,* yellowish white. *H.* = 4-5. *Sp.gr.* = 4. *Contents* (*max.*), Antimony 80 per cent.

1301. ——. *Assoc.with* Stibnite and Valentinite. *Loc.* St. John's Cr. Goldfield, Burnett R., 16 miles S.W. of Eidsvold. *Co.* Wicklow; *Dist.* **Burnett.** *Ref.* P.R.S.Q., vol. 4, p. 45 (1887).

1302. ——. On ridge, nr. First Call Lode, No. 1, Cocoa Cr., trib. of McIvor R., 33 miles N.N.W. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Refs.* G.S.Q. Pubs. 91, p. 4 (1893), 209, pp. 6, 7 (1907), and 223, pp. 23 and 24 (1909).

1303. ——. *Assoc.with* Stibnite. *Loc* Cocoa Cr., trib. of McIvor R. (*ante*). *Ref.* G.S.Q. Pubs. 209, p. 6 and 223, pp. 23, 24 (1909).

1304. ——. *Assoc.with* Gold and Stibnite. *Loc.* Starcke R., 22 miles N.W. of Cooktown. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.M.

1304A.——. *Assoc.with* Gold, Iron Pyrites, and Stibnite, in quartz. *Loc.* Craig's Antimony Lease, Emily Reef, Northcote, Hodgkinson Goldfield, 15 miles W. of Mareeba Rail. Stn. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 16, 1885, and 125, p. 48 (1897).

1305. ——. *Assoc.with* Gold, Stibnite, and Iron Pyrites. *Loc.* Emily Antimony Lode, Northcote, Hodgkinson Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 16, p. 31 (1884), and 125, p. 48 (1897).

1306. ——. *Assoc.with* Stibnite. *Loc.* Nil Desperandum Mine, Watsonville, 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M.

1307. ——. *Assoc.with* Stibnite. *Loc.* Silver Spur Mine, nr. Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** *Assays:* (1) Gold = trace; Silver = 9 dwt. 13 gr. per ton; Antimony = 80·2 per cent.; Gold = 4 dwt. 9 gr.; Silver = 4 dwt. 19 gr.; Antimony = 39·9 per cent. *Ref.* A.R., p. 68 (1906).

1307A.——. *Assoc.with* Stibnite, in silicified slate. *Loc.* Homestead Diggings, 46 miles (by rail) W.S.W. of Charters Towers, Gt. Northern Rail. *Co.* Griffith; *Dist.* **Kennedy North.**

1308. ——. *Assoc.with* Stibnite. *Loc.* 3 miles W. of Homestead, 49 miles (by rail and road) W.S.W. of Charters Towers. *Co.* Griffith (*ante*). *Ref.* A.R., p. 67 (1906).

1309. ——. *Assoc.with* Stibnite, in quartz lode 18 in. thick. *Loc.* 7 miles from Aramara Rail. Stn. (Gayndah line), 39 miles (by rail and road) W. of Maryborough. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* B.D.

1310. Cervantite. *Assoc.with* Gold, Iron Pyrites, and Stibnite. *Loc.* Yorkey's Surprise G.M. Lease and Zealandia G.M. Lease, in the Surprise Zealandia Quartz Reef, Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 14 (1902).

1311. ——. *Assoc.with* Stibnite and Gold (traces), in calcite lode. *Loc.* Gympie Antimony Mine, nr. Sel. 3482, Chatsworth Scrub, 7 miles N.W. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* B.D.

1312. ——. *Assoc.with* Stibnite. *Loc.* Neerdie Antimony Mine, 14 miles N.byE. of Gympie. *Co.* March (*ante*). *Ref.* G.S.M.

Cette Is. (*See also* Einauro Is.), Brit. New Guinea. *Min.Ref.* Limestone, *see* 702,

Ceylonite. *Var.* of Spinel, *which see.*

Chabazite. *Compo.* Silicate of alumina and lime. *Colour,* usually white. *Lustre,* vitreous. Brittle. *H.* = 4·5. *Sp.gr.* = 2·0-2·1.

1312A.——. In decomposed basalt. Freestone Cr., N. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* B.D.

1313. ——. In basalt. Peak Downs (Clermont) Goldfield, 229 miles W.byN. of Rockhampton (Clermont Br. Rail.). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 4, p. 69 (1887).

1314. ——. *Assoc.with* Augite. *Loc.* Mt. Drew, 85 miles N.N.W. of Port Moresby. Brit. New Guinea.

——. **Phacolite** (*Var.*). Crystals, colourless and lenticular.

1315. —— ——. *Assoc.with* Calcite, Ferro-Calcite, and Natrolite, in basic volcanic tuff. *Loc.* Railway Cutting, between Spring Bluff and Harlaxton Rail. Stns., 5 miles N. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* B.D.

1316. —— ——. *Assoc.with* Calcite, Magnesite, and Natrolite. *Loc.* Pors. 27 and 81v., Mt. Davidson, 5 miles S.S.E. of Toowoomba. *Co.* Churchill; *Dist.* Moreton.

Chalcanthite. *Syn.* Blue Vitriol, Copper Vitriol. *Compo.* Sulphate of copper. *Colour,* blue shades. *Lustre,* vitreous. *Streak,* colourless. Soluble in water. *H.* = 2·5. *Sp.gr.* = 2·2.

1317. ——. In the old workings, Golden Gate Reef, 4 miles N.W. of Croydon. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

1318. ——. *Assoc.with* Gold, Tetrahedrite, Cuprite, Azurite, Malachite, and Ironstone, in lodes in gneiss and schist. *Loc.* Arbouin Mines, nr. Nondah Cr., Walsh R., 18 miles W. of Mungana, Chillagoe Rail. *Co.* Bulwarra; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 134, pp. 13 and 14 (1898).

1319. ——. *Assoc.with* Copper Pyrites and Copper Carbonate. *Loc.* Electron Silver Mine, Caledonia Cr., nr. Goldsmith Cr., 26 miles S.S.E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

1320. —— (stalactitic). Montalbion Mine, 7 miles S.W. of Stannary Hills (Chillagoe Br. Rail.), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook.

1321. ——. *Assoc.with* Copper Pyrites and Marcasite. *Loc.* Chance Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills (Chillagoe Br. Rail.), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

1322. ——. *Assoc.with* Cassiterite, Wolfram, Iron Pyrites, Fluorspar, and Chlorite, in diorite dyke. *Loc.* Glencairn Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 23 (1883), and p. 125, p. 40 (1897).

1323. —— (stalactitic). *Assoc.with* Copperas. *Loc.* North Australian Mine, Watsonville (*ante*). *Ref.* G.S.M.

1324. ——. *Assoc.with* Copper Pyrites. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

1325. ——, *Assoc.with* Copper Pyrites, Copper Carbonate, Iron Pyrites, Mispickel, Marcasite, Cassiterite, Wolfram, Limonite, and Red and Yellow Ochre. *Loc.* Try Again and Chance Mine, Watsonville ((*ante*). *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

1326. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Azurite. *Loc.* Wyatt's Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

1327. ——. *Assoc.with* Gold, Cuprite, Tile Ore, Tenorite, Malachite, Atacamite, Iron Pyrites, Limonite, Calcite, and Chalcedony, in kaolinised slate and gossan. *Loc.* Mt. Elliott Copper Mine, Mt. Elliott Group, Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 3-12 (1908).

1328. ——. *Assoc.with* Galena, Minium, Anglesite, Massicot, and Limonite, in slate. *Loc.* John Bull Mine, Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

1329. ——. *Assoc.with* Copper Pyrites, Cassiterite, and Mispickel, in elvan dyke and quartz. *Loc.* Ironclad Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 8 (1883).

1330. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Bornite, Cuprite, Tenorite, Malachite, Azurite, Iron Pyrites, Mispickel, Hematite, Magnetite, Zinc-Blende, Cerussite, and Minium, in quartz lodes in quartzite and porphyry. *Loc.* Mt. Garnet Mine, Return Cr., br. of Wild R., 136 miles (by rail) S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 16, 19 (1898).

1331. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Magnetite, Limonite, Manganese-dioxide, and Talc, in quartz and porphyry. *Loc.* Mt. Leyshon, 16 miles S. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pubs. 18, pp. 1, 2, (1885), and 73, p. 13 (1891).

1332. ——. *Assoc.with* Copper Pyrites. *Loc.* Black Jack Mine, Ravenswood Goldfield, 78 miles (by rail) S. of Townsville (Northern line). *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

1333. ——. *Assoc.with* Copper Pyrites. *Loc.* Bonnet Reef, Strathalbyn Goldfield, Burdekin, 30 miles E.byS. of Ravenswood. *Co.* Gladstone (*ante*). *Ref.* G.S.M.

1334. ——. *Assoc.with* Copper Pyrites, Azurite, and Malachite, in quartz reef in granite. *Loc.* Continong Mine, Burdekin R., 70 miles W. of Townsville. *Co.* O'Connel; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 35, p. 12 (1887), and G.S.M.

1335. ——. *Assoc.with* Gold, Copper Pyrites, Bornite, and Copperas, in diorite. *Loc.* Mt. Clifford Mine, between Retreat and Ruby Creeks, 9½ miles N.W. of Anakie (Central Rail.). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 127, p. 2 (1898).

1336. ——. *Assoc.with* Gold, Copper Pyrites, Orthoclase, and Calcite, in quartz. *Loc.* Red Streak Reef, Yatton Goldfield, 20 miles S.W.byW. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 7 (1887).

Chalcedony. *Compo.*, Silica, in a crypto-crystalline form. *Colour*, usually white. *H.* = 7. *Sp.gr.* = 2·6.

VARIETIES: Agate, Bloodstone, Carnelian, Chrysoprase, Hornstone, Lithophyses, Onyx, Prase, Sardonyx.

MINERAL NOTE: Up to the present time none of the chalcedony varieties, except chrysoprase, have been utilized as gems or ornamental stones. Chrysoprase of a very beautiful apple-green colour is found in alluvial drifts and in small veins about Princhester and Marlborough, to the north of Rockhampton. Lithophyses, of scientific interest, are found in abundance at Mt. Hay, near Wycarbah, Central Queensland Railway.

1336A.——. Dismal Cr., Canobie Run, about 84 miles N. of Cloncurry. *Co.* Canobie; *Dist.* **Burke.** *Ref.* G.S.M.

1337. ——. *Assoc.with* Gold, in quartz and ironstone. *Loc.* Saracinesca Reef, between Rose and Thistle Reef and Soldier's Cap, 24 miles S.E. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 4 (1895).

1338. ——. *Assoc.with* Iron Pyrites, Limonite, and Jasper. *Loc.* Dreadnought M.L. (452), Mt. Metallic Group, Prospector Cr., Leichardt R., 52 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 299 (1908).

1339. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Magnetite, Mispickel, Native Bismuth, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, and Epidote. *Loc.* Biggenden Mine, Mt. Biggenden, 4½ miles W. of Biggenden, 58 miles (by rail and road) W. of Maryborough, Gayndah Br. Rail. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pubs. 60 (1890), p. 173, p. 2 (1902), and p. 194 (1904), and G.S.M.

1340. ——. *Assoc.with* Sapphire and Rock Crystal, in alluvial deposits. *Loc.* Rossville Tin Mines, Wallaby Cr., trib. of Annan R., 25 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* **Cook.** *Ref.* O.R.

1341. ——. McGann Range, 5 miles N.N.E. of Thornborough, Hodgkinson Goldfield. *Co.* Dagmar; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 4 (1885).

1342. ——. Mt. Robert Range, 5 miles S.S.E. of Thornborough, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 4 (1887).

1343. Chalcedony. *Assoc.with* Gold, Cuprite, Tile Ore, Tenorite, Malachite, Chalcanthite, Iron Pyrites, Limonite, and Calcite, in kaolinised slate and gossan. *Loc.* Mt. Elliott Copper Mine, Mt. Elliott Group, Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 3-14 (1908).

1344. ——. *Assoc.with* Gold, Iron Pyrites, and Calcite, in quartz. *Loc.* North Australian Reef, Charters Towers, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 36 (1887).

1345. ——. Lake Lucy, Upper Burdekin, 112 miles N.W. of Townsville. *Co.* Gunnawarra; *Dist.* Kennedy North. *Ref.* G.S.M.

1345A.——. *Assoc.with* Gold, Jasper, Lydianstone, Zircon, and Sapphire, in alluvial deposits. *Loc.* 14v, Bunerba, ½ mile S. of Don R., about 39 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* Q.G.M. Jour., vol. 5, pp. 610, 611 (1904).

1346. ——. Mt. Macedon Range, 75 miles S.W.byW. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1347. ——. Mt. Toussaint Range, 45 miles S.W. of Bowen. *Co.* Salisbury (*ante*). *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1348. ——. Pelican Cr., trib. of Bowen R., 50 miles S.W. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1349. ——. In porphyry. Bowen R., below Blenheim Stn., 64 miles W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 54, p. 5 (1889).

1350. ——. *Assoc.with* Agate, Calcite, and Laumonite, in basic igneous rocks. *Loc.* Mt. McGregor, 2½ miles S.E. of Mt. Toby, W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 164, p. 15 (1901).

1350A.——. *Assoc.with* Gold, Ilmenite, Magnetite, Rutile, Sapphire, Diamond, Spinel, Amethyst, Garnet, Zircon, Cairngorm, Jasper, Topaz, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Crs., Anakie Sapphire Field. *Cos.* Clermont and Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), and 172 (1902).

1351. ——. Springsure, 206 miles (by rail) W.S.W. of Rockhampton. *Co.* Denison; *Dist.* Leichhardt. *Ref.* P.R.S.Q., vol. 4, p. 63 (1887).

1352. ——. In basalt. Blackall Range, 5 miles W. of Yandina, 74 miles (by rail and road) N. of Brisbane, North Coast Rail. *Co.* Canning; *Dist.* **Moreton.** *Ref.* Q.M.

1353. ——. Mt. Sylvia, 12 miles S. of Gatton Rail. Stn. (Main line), 61 miles (by rail and road) W. of Brisbane. *Co.* Churchill; *Dist.* Moreton. *Ref.* L.C.B.

1354. ——. *Assoc.with* Limestone, Hornstone, and Chert. *Loc.* Limestone Hill, Ipswich, 24 miles (by rail) W.S.W. of Brisbane (Main line). *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.M., B.D., and G.S.Q. Pub. 194, p. 58 (1904).

1355. ——. In petrified wood. Mt. Phillipson, North Pine, 17 miles (by rail) N. of Brisbane (North Coast line). *Co.* Stanley (*ante*). *Ref.* L.C.B.

1356. ——. In basalt. Pine Mt. Road, ¼ mile N. of Muirlea Rail. Stn. (Brisbane-Valley line), 5 miles N.N.W. of Ipswich. *Co.* Stanley (*ante*). *Ref.* L.C.B.

1357. ——. In tuffaceous shales. Redcliffe, Moreton Bay, 26 miles N.N.E. of Brisbane. *Co.* Stanley (*ante*). *Ref.* B.D.

1358. ——. Cliffs nr. beach, Sandgate, 13 miles (by rail) N.byE. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* Q.M.

1359. ——. Cliffs nr. beach, Scarborough, about 25 miles (by rail and road) N.N.E. of Brisbane. *Co.* Stanley (*ante*). *Ref.* Q.M.

1359A.——. *Assoc.with* Common Opal, in ferruginous clay. *Loc.* Railway Cutting, Tingalpa Cr., nr. Hemmant Rail. Stn., 10½ miles (by rail and road) E.byN. of Brisbane. *Co.* Stanley (*ante*). *Ref.* B.D.

1360. ——. In porphyry. Christmas Cr., Beaudesert, 47 miles (by rail) S.byE. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.M.

1361. ——. *Assoc.with* Gold, Magnesite and Serpentine, in gossan. *Loc.* Oaks View Consld. Mine, Oaks View, 4 miles N. of Oaks Stn., 45 miles (by road) N.N.W. of Rockhampton. *Co.* Liebeg; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 205, pp. 16, 17 (1906).

1362. ——. *Assoc.with* Agate, in volcanic tuff and pitchstone. *Loc.* Mt. Hay, 1 mile from Wycarbah Rail. Stn. (Central line), 25 miles (by rail and road) W.S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 47, p. 6 (1889).

1363. —— Stewart's Cr. and Bushley, near Stanwell, about 22 miles (by rail) S.W. of Rockhampton, on Central Rail. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1893).

1363A.—— (pseudomorph after Calcite). Dee Copper Mines, above Dundee, 20 miles S.S.W. of Mt. Morgan. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* B.D.

1363B.——. *Assoc.with* Carnelian, Agate, and Rock Crystal, in quartz. *Loc.* Gilmore Stn., head of Bulloo R., about 38 miles N. of Adavale. *Co.* Gowan; *Dist.* Warrego. *Ref.* O.R.

1364. ——. *Assoc.with* Gold, in cement. *Loc.* Moondilla Goldfield, 10 miles S. of Adavale, 90 miles (by rail and road) W.N.W. of Charleville Rail. Stn. (Western line). *Co.* McKinlay; *Dist.* Warrego. *Ref.* G.S.Q. Pub. 78, p. 1 (1891).

1365. ——. Mungar Junction, 48 miles (by rail) N. of Gympie, 13 miles (by rail) S.W. of Maryborough, North Coast Rail. *Co.* Marsh; *Dist.* **Wide Bay.** *Ref.* O.R.

1366. ——. *Assoc.with* Hornstone. *Loc.* Neighbourhood of Port Moresby, 380 miles N.byE. of Cooktown, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 10 (1892).

——. **Agate** (*var.*). (Variegated Chalcedony).

1367. —— ——. In creeks, N. of Nanango, about 14 miles S.S.E. of Kingaroy Rail. Stn. (Kilkivan line). *Co.* Fitzroy; *Dist.* **Burnett.** *Ref.* O. and A., p. 101, and N.B.

1368. —— ——. Burnett R., about 50 miles W. of Bundaberg. *Co.* Yarrol, etc.; *Dist.* Burnett. *Ref.* Q.M.

1369. —— ——. Little R., br. of Gilbert R., 30 miles E. of Croydon. *Co.* Lang; *Dist.* Cook. *Ref.* G.S.Q. Pub. 196, p. 24 (1905).

1370. —— ——. *Assoc.with* Gold. *Loc.* Cameron's Leader, Upper Percy R., br. of Gilbert R., 60 miles S. of Georgetown, Etheridge Goldfield. *Co.* Percy; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 24 (1897).

1371. —— ——. Percy River, br. of Gilbert R., 60 miles S. of Georgetown (*ante*). *Ref.* G.S.Q. Pub. 196, p. 24 (1905).

1372. —— ——. Robertson Cr., head of Percy R. (*ante*). *Ref.* B.D.

1373. —— ——. Agate Creek, br. of Robertson R., 30 miles S. of Georgetown, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 63 (1887).

Note.—Large quantities of well-marked Agates are said to occur at the head of Agate Creek.

1374. —— —— (good specimens). Bellevue Stn., Mitchell R., 90 miles W. of Pt. Douglas. *Co.* Wrotham; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

1375. —— ——. Bowen R., about 50 miles S.W. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1376. —— ——. Pelican Cr., br. of Bowen R., 50 miles S.W. of Bowen (*ante*).. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1377. —— ——. Mt. Macedon Range, N.W. boundary of Bowen Coal Field, nr. Mt. Toussaint. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1378. —— ——. Mt. Toussaint Range, 45 miles S.W. of Bowen. *Co.* Salisbury (*ante*). *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1379. —— ——. Cape Hillsborough, 18 miles N.W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 53, p. 9 (1889).

1380. —— ——. *Assoc.with* Laumonite and Calcite. *Loc.* Mt. McGregor, 2½ miles S.E. of Mt. Toby, W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 164, p. 6 (1901).

1381. —— ——. Muttaburra, 70 miles N.W. of Barcaldine Rail. Stn. (Central line). *Co.* Cumberland; *Dist.* **Mitchell.** *Ref.* L.B. 3, p. 479 (1894).

1382. —— ——. *Assoc.with* Chalcedony, in volcanic tuff and pitchstone. *Loc.* Mt. Hay, Wycarbah, 24 miles (by rail) S.W.byS. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 47, p. 6 (1889).

1382A.—— ——. *Assoc.with* Carnelian, Chalcedony, and Rock Crystal, in quartz. *Loc.* Gilmore Stn., head of Bulloo R., about 38 miles N. of Adavale. *Co.* Gowan; *Dist.* Warrego. *Ref.* O.R.

——. **Bloodstone** (*var.*). *Syn.* Heliotrope. *Colour*, green, with small spots of red Jasper.

1383. —— ——. In creeks N. of Nanango, about 14 miles S.S.E. of Kingaroy (Kilkivan Rail. line). *Co.* Fitzroy; *Dist.* Burnett. *Ref.* O. and A., p. 101, and N.B.

Chalcedony. **Carnelian** (*var.*). *Syn.* Sard. *Colour,* clear red, yellow. Translucent.

1384. —— ——. In creeks N. of Nanango, about 14 miles S.S.E. of Kingaroy (Kilkivan Rail. line). *Co.* Fitzroy; *Dist.* **Burnett.** *Ref.* O. and A., p. 101, and N.B.

1385 —— ——. Tate R., between Koorboora and Ord Rail. Stns. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra or Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

1386. —— ——. *Assoc.with* Agate, in vesicular basalt. *Loc.* Little R., br. of Gilbert R., 30 miles E. of Croydon. *Co.* Lang; *Dist.* Cook. *Ref.* B.D.

1387. ——. Wild R. (Upper Herbert R.), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 64 (1900).

1388. —— ——. In acidic volcanic rock. Mt. Hay, nr. Wycarbah, about 24 miles W.S.W. of Rockhampton (Central line). *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* B.D.

1388A. ——. *Assoc.with* Chalcedony, Agate, and Rock Crystal, in quartz. *Loc.* Gilmore Stn., head of Bulloo R., about 38 miles N. of Adavale. *Co.* Gowan; *Dist.* Warrego. *Ref.* O.R.

——. **Chrysoprase** (*var.*). *Colour,* apple green.

1389. ——. Marlborough, 60 miles N.W. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Ref.* Q.M.

1390. —— ——. Containing Nickel, in 4-inch vein. *Loc.* On range 1 mile E. of Broadsound Road, nr. Princhester, 50 miles N.W. of Rockhampton. *Co.* Liebeg (*ante*). *Ref.* G.S.M.

——. **Hornstone** (*var.*). Resembles flint, but more brittle.

1391. ——. Police Cr., trib. of Gregory R., 90 miles S.S.W. of Burketown. *Co.* Gregory; *Dist.* Burke. *Ref.* B.D.

1392. —— ——. Chalcedony. *Var.* Hornstone. Springsure, 206 miles (by rail) W.S.W. of Rockhampton (Central line). *Co.* Denison; *Dist.* **Leichhardt.** *Ref.* P.R.S.Q., vol. 4, p. 64 (1887).

1393. —— ——. *Assoc.with* Chalcedony, Chert, and Limestone. *Loc.* Limestone Hill, Ipswich, 34 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 194, p. 58 (1904), and G.S.M.

1394. —— ——. *Assoc.with* Chalcedony. *Loc.* Port Moresby, 380 miles N.byE. of Cooktown, Brit. New Guinea. *Ref.* G.S.Q. Pub. 85, p. 10 (1892).

——. **Lithophyses** (*var.*). A pseudomorph occurring in acidic volcanic rocks.

1395. —— ——. Square Top Mt., Cumkillenbar, 17 miles N.W. of Dalby. *Co.* Aubigny; *Dist.* Darling Downs. *Ref.* G.S.M.

1395A. —— ——. 9 inches in diameter, made up of banded Chalcedony. *Loc.* Tambourine Mt., 10 miles S.S.E. of Logan Village Rail. Stn. (Beaudesert line). *Co.* Ward; *Dist.* Moreton.

1396. —— ——. In pitchstone. *Loc.* Mt. Hay, nr. Wycarbah, 24 miles W.S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* B.D.

——. **Onyx** (*sub-var. of* Chalcedony). Flat-banded, with white and black; or white, brown, and black alternate layers.

1397. —— ——. Springsure, 206 miles (by rail) W.S.W. of Rockhampton (Central line). *Co.* Denison; *Dist.* Leichhardt. *Ref.* G.M.

——. **Prase** (*var.*). *Colour,* dull leek-green. Translucent.

1398. —— ——. In alluvial deposits in bed of creek *Loc.* Dargalong, 7 miles S. of Zilmanton Rail Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 60 (1900).

1399. —— ——. In diorite dyke. Stanthorpe, 207 miles (by rail) S.W. of Brisbane, on main line. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

1400. —— ——. Sandy Cr. (?), 22 miles S.W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* B.D.

1401. —— ——. In diorite dyke. Cape R. Goldfield, 66 miles (by rail) S.W.byW. of Charters Towers (Northern line). *Co.* Griffith; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

1402. —— ——. Gladstone, 328 miles N.N.W. of Brisbane, North Coast Rail. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* Q.M.

——. **Sardonyx** (*sub-var. of* Chalcedony). Flat layers of red, alternating with others of white and brown, and sometimes black.

1403. —— ——. Barkly Tableland, about 164 miles W.byN. of Cloncurry. *Co.* Wonomo; *Dist.* Burke. *Ref.* Q.M.

1404. —— ——. Burnett River, about 50 miles W. of Bundaberg. *Co.* Yarrol; *Dist.* Burnett. *Ref.* Q.M.

Chalcocite. *Syn.* Redruthite, *which see.*

Chalcolite. *Syns.* Uran Mica, Torbernite, Copper-Uranite. *Compo.*, Phosphate of uranium and copper. *Colour*, shades of green. *Lustre*, pearly; micaceous. *H.* = 2-2·5. *Sp.gr.* = 3·5. *Contents* (*max.*), Uranium Oxide 61 per cent.

1405. ——. *Assoc.with* Cassiterite and small quantities of Pitchblende. *Loc.* Gladstone Mine, Eureka Cr., nr. Stannary Hills (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* B.D.

1406. ——. Watsonville, 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills (Chillagoe Br. Rail.), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 58 (1900).

1407. ——. *Assoc.with* Wolfram, Molybdenite, Bismutite, and Topaz, with traces of Hematite and Limonite, in small veins in a large quartz-topaz lode, in granite. *Loc.* Lappa Wolfram Lode, 2½ miles S.S.W. of Lappa Junction (Chillagoe line), 104 miles (by rail and road) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

1407A. ——. King George Mine, Fingertown, nr. Mt. Garnet. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* B.D.

Chalcopyrite. *Syn.* Copper Pyrites, *which see.*

Chalcostibite. *Syn.* Antimonial Copper Ore. *Compo.*, Sulphide of antimony and Copper. *Colour*, lead grey. *Streak*, black. Metallic. *H.* = 3-4. *Sp.gr.* 4·7. *Contents* (*max.*), Antimony 48 per cent., Copper 25 per cent.

1408. ——. *Assoc.with* Cuprite, Malachite, and Tetrahedrite, in lode formation. *Loc.* Copper Lode, Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 4 (1885), and P.R.S.Q., vol. 4, p. 54 (1887).

Chalcotrichite. *Var. of* Cuprite, *which see.*

Chalk. *Var. of* Calcite, *which see.*

GEOLOGICAL NOTE: The only known occurrence of chalk is that in the Cretaceous Rocks of Western Queensland. The deposit, which is said to be several feet thick, has not been examined officially, but hand specimens show it to be composed of the remains of Infusoria.

Chalybite. *Syn.* Siderite, *which see.*

Chamberlain Bore. *See under* Artesian Bores. No. 240.

Chambers of Commerce and Mines in Queensland. Barcaldine, Brisbane, Bowen, Bundaberg, Cairns, Charters Towers, Childers, Cooktown, Dalby, Gladstone, Gympie, Herberton, Ipswich, Mackay, Maryborough, Mitchell, Morven, Nanango, Proserpine, Rockhampton, Roma, Toowoomba, Townsville, and Warwick

Champion Blocks Bore. *See under* Artesian Bores. No. 204.

Champion Gully, 1 mile N.E. of Mt. Morgan. *Min.Ref.* Copper Pyrites, *see* 2308; Gold, 4360, 4375; Iron Pyrites, 5417-5419.

—— Lease (190), head of Champion Gully, Mt. Morgan (Crocodile Cr.) Goldfield. *Min.Ref.* Copper Pyrites, *see* 2308; Gold, 4360; Iron Pyrites, 5417.

Chance Gold Reef. Iguana Hill, Croydon Goldfield. *Min.Ref.* Gold, *see* 3487, 3496; Graphite, 4585A.

—— —— ——. Woodville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3764.

—— P.A. (283). St. Paul's Group, Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2117; Limonite, 5823; Malachite, 6186; Redruthite, 7269; Tile Ore, 2540.

—— Tin Mine. Herberton. *Min.Ref.* Cassiterite, *see* 1071.

—— —— ——. Watsonville. *Min.Ref.* Cassiterite, *see* 890; Chalcanthite, 1321; Copper Carbonate, 1890; Copper Pyrites, 2156; Iron Pyrites, 5062; Marcasite, 6502; Mispickel, 6690; Scheelite, 7345; Wolfram, 7949.

Chandie Chank Lode. Gilberton. *Min.Ref.* Galena, *see* 2825; Native Silver, 7554.

Chandler's Gully. Eastern Boyne Goldfield. *Min.Ref.* Gold (alluvial), *see* 3375.

—— Reef. Norton Goldfield. *Min.Ref.* Azurite, *see* 245; Copper Pyrites, 2290; Gold, 4269; Iron Pyrites, 5369; Malachite, 6358; Mispickel, 6789; Redruthite, 7301; Scorodite, 7376; Silver, 7520; Zinc-Blende, 8189.

Chapman's Bore. *See under* Artesian Bores. No. 340.

1409. ——. Charcoal (natural), in coal seam. Bogside Colliery, Bundamba Coal Area, 21 miles W.S.W. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* G.S.M.

Charges for Milling Ore. *See under* Crushing Mill Charges.

Charges (ore-buying) of Smelting Works. *See* Tariffs of Smelting Works.

Charleston (Rail. Stn.). Etheridge Goldfield. *Lat.*, 18° 35′. *Long.*, 143° 35′. Reefs:—Cora, Lynn, Lock, Mountain, Nil Desperandum, Queenslander, Struggle, etc. *Min.Ref.* Cerussite, 1190A; Copper Ore, 2025; Copper Pyrites, 2146A, 2147; Fluorspar, 2656; Galena, 2748A, 2749, 2750; Gold, 3721-3723A; Iron Pyrites, 5042-5043A; Limonite, 5840A, 5840B; Mispickel, 6681; Pyrrhotite, 7153; Redruthite, 7278A; Silver, 7449B;; Zinc-Blende, 8075, 8076.

Geological Note: The country rock is made up of varieties of granite, in which there are large and small mineralised lodes containing gold, silver, lead, and copper. Quartz reefs carrying gold also occur in the district.

Charleston Bore. *See under* Artesian Bores. No. 13.

Charleville. 483 miles W.byN. of Brisbane, Western Rail. *Co.* Orrery; *Dist.* Warrego. *Lat.*, 26° 24′ S.; *Long.*, 146° 14′ E. *Railway Base* for the Group of Opal Mines known as the Eromanga (Erounghoola Stn.), Keeroongooloo and Kyabra Opal Fields, and for Bull's Cr. and Valdare Opal Mines, *viâ* Adavale. *Min.Ref.* Coal, *see* 1804A.

Geological Note: The rocks are made up of sedimentary beds belonging to the "Rolling Downs" Formation (Lower Cretaceous), and contain an artesian water supply. Some miles to the east and to the north there are Upper Cretaceous "Desert Sandstones." *See* G.S.Q. Pub. No. 101 for details.

Charleville Bores. *See under* Artesian Bores. Nos. 14, 205.

Charlotte Plains Run Artesian and Sub-artesian Bores. *See under* Artesian Bores and Notes. Nos. 206, 207. Seam of coal, 15 ft. thick, said to occur at 550 ft. in No. 8 (Richmond) Bore.

Charlotte Plains. *Min.Ref.* Coal, *see* 1595A, 1804B.

Charlotte Vale Bore. *See under* Artesian Bores. No. 225.

Charlton Bore. *See under* Artesian Bores. No. 208.

Charters Towers Diamond Drill Bores. *See under* Gold Bores.

Charters Towers Goldfield—

Situation: *See maps,* Pls. 16, 17, 28. The town is 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. Centre about *Lat.* 20° 5′ S.; *Long.* 146° 18′ E.

Discovery: Gold was found early in 1872, by Messrs, Mosman, Clarke, and Fraser. A great "rush" took place in Aug., 1872.

Railway Base for Cape River, Windsor, and Carrington goldfields; Black Knob, Seventy-mile, Mt. Leyshon, and Lucky Creek gold workings; Stockyard Creek and Sandy Creek tin workings.

Population: 22,035 (estimated, 1910).

Rainfall: Yearly aver., 1902 to 1907, 25·41 inches. Wet days, 57.

Proclamation of Field: First gazetted, Aug. 29, 1872. Last alteration gazetted 4th September, 1912, as follows:—Commencing at the southern junction of the Ana-branch and the Burdekin River, and bounded thence by the Ana-branch upwards to its junction with Sandy Creek, by that creek upwards to its junction with the Southern Cross Creek; thence by that creek upwards to the north-east corner of Miner's Homestead No. 2503, by the northern boundary of that homestead and a line west eighty chains, by a line south to the Great Northern Railway line; thence southerly by a watershed to Jesmond Block; thence by the northern boundaries of that block, Windsor No. 4 Block, and portion 6v, parish of Bletchington, and the Seventy-mile Range south-easterly and north-easterly to Spring Creek No. 1 Block; thence by the western boundaries of that block and Cardigan Holding northerly to the northern bank of the Burdekin River; thence by the northern bank of that river north-westerly to a point north-easterly from the point of commencement; thence by a line south-westerly thereto.

Area: 393,600 acres (615 square miles).

Leases: Gold-mining leases in force, and applications for leases, 106; area, 2,177 acres. Mineral leases, and applications, 13; area, 331 acres. Miner's homesteads, and applications, 3,091; area, 18,902 acres (1912).

Principal Mining Centres: Charters Towers; Millchester.

Mineral Statistics:

Gold,	*see tables and*	*diagram*	Pls. 36, 46, 46A, 47.
Silver,	,,	,,	Pls. 37, 46, 46A.
Lead,	,,	,,	Pls. 38, 46, 46A.
Limestone,	,,	,,	Pls. 41, 46, 46A.
Tin,	,,	,,	Pls. 38, 46, 46A.
Copper,	,,	,,	Pls. 39, 46, 46A.
Antimony,	,,	,,	Pls. 40, 46, 46A.

Charters Towers Goldfield—*continued*:

STATISTICAL NOTES: Greatest recorded annual gold yield (year 1899) = 319,572 fine ounces; value, £1,357,455. Smallest gold yield (1883) = 86,228 fine ounces; value, £366,273.

The yields fluctuated between 1883 and 1899, but gradually increased; those between 1899 and 1905 also fluctuated, but gradually decreased. Between 1905 and 1910 the annual yields have steadily increased, but the two last years show a considerable falling off.

Total yield of gold to end of 1912, 6,359,225 fine ounces; value, £27,012,253. This is equal to 35·92 per cent. of the whole gold production of the State, and 4·93 per cent. of that of Australia.

MINERAL REFERENCES: **Gold**, *see* 3880-3976; Lead (Galena), 2865-2921; Copper (Chrysocolla), 1525; (Copper Carbonate), 1913; (Copper Pyrites), 2216-2219; Arsenic (native), 99A; Zinc (Zinc Blende), 8116-8134; Iron (Iron Pyrites), 5145-5218; (Ironstone), 5549; (Mispickel), 6742-6743; (Pyrrhotite), 7159. Other Minerals—Apatite, 78; Barytes, 272, 273; Calcite, 497-500; Chalcedony, 1344; Chlorite, 1458, 1459; Gypsum, 4620, 4621; Plagioclase, 7071; Scolecite, 7359-7361; Selenite, 4643; Steatite, 7690.

GEOLOGICAL NOTE: The rocks on the field comprise granite, schists, slates, felsites, and diorites. The granite has disturbed and altered the sedimentary rocks, and dykes of felsite have intersected the granite, schists, and slates, all of which have been intruded by numerous dykes of diorite. Several richly gold-bearing quartz reefs have been formed subsequent to the intrusion of diorite, and are of very regular occurrence. *See* G.S.Q. Pub. No. 94 for details and map, and No. 224 for notes.

GEOLOGICAL PUBLICATIONS: *Reports*—Nos. 1 (1878), 2 (1878), 48 (1888), 94 (1893), *Map*—No. 142 (1898). "*Geol. of Queensland*"—No. 92 (1892). *See under* "Geol. Surv. Pub. List," *and also under* Gov. Min. Jour., Report Nos. 61, 118. For Plans of Leases, etc., in Annual Reports, *see* List *under* Department of Mines. *See also* Supplementary Report List, No. 42, 43, 141.

WARDEN: Stationed at Charters Towers. *See under* "Wardens" for names of the fields controlled.

WARDENS' REPORTS: Monthly in Q.G.M.J.; annually in A.R.D.M.

INSPECTOR OF MINES: Stationed at Charters Towers. *See under* "Inspector of Mines" for the names of fields periodically visited.

INSPECTORS' REPORTS: Monthly in Q.G.M.J.; annually in A.R.D.M.

CHARTERS TOWERS STOCK EXCHANGE: Secretary, W. J. Hutton.

CHAMBER OF COMMERCE AND MINES: Secretary, A. H. Pritchard.

SCHOOL OF MINES: *See* separate heading.

TECHNICAL COLLEGE: *See* separate heading for mining subjects taught.

CRUSHING MILLS: Batteries, 19 (= 439 stamps). Charges, 10s. per ton.

GENERAL INFORMATION: Consult *Pugh's Almanac; Queensland Post Office Directory; Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

LOCAL NEWSPAPERS: *Northern Miner; Evening Telegraph; North Queensland Register; New Eagle; North Queensland Telegraph.*

Charters Towers "Outside" Mines. (Notes on some). *See under* Govt. Mining Jour., Report No. 118.

—— —— School of Mines. *See* "School of Mines."

Chataway Co.; Kennedy South Dist. *See map,* Pl. 14.

Chatham Bore. *See under* Artesian Bores. No. 361.

Chatsworth Co.; Gregory North Dist. *See map,* Pl. 20.

Chatsworth Scrub, N.W. of Gympie. *Min.Ref.* Cervantite, *see* 1311; Gold, 4547; Stibnite, 7657.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 209.

Cheese Factory Bore. *See under* Artesian Bores. No. 282.

Chelmsford Co.; Cook Dist. *See map,* Pl. 8.

Chemical Elements.—

Name.	Symbol.	Atomic Weight.	Specific Gravity.	Principal Source.
Aluminium	Al	27·1	2·58	Beauxite, Cryolite
Antimony	Sb	120·2	6·61 to 6·8	Stibnite
Argon	A	39·88	...	Atmosphere
Arsenic	As	74·96	3·70 (yellow); 4·713 (black); 5·727 (normal)	Mispickel
Barium	Ba	137·37	3·6	Barytes, Witherite
Beryllium (Glucinum)	Be	9·1	1·64	Beryl
Bismuth	Bi	208·0	9·78 to 9·823	Native Bismuth, Bismuthinite
Boron	B	11·0	2·45 (amorphous); 2·68 (crystalline)	Borax (native), Colemanite
Bromine	Br	79·92	3·188	Carnallite
Cadmium	Cd	112·4	8·65	Zinc-blende, Cadmium blende
Caesium	Cs	132·8	2·40	Lepidolite, Mineral Waters, Carnallite
Calcium	Ca	40·07	1·554	Limestone and fluoride
Carbon	C	12·0	1·57 (amorphous); 3·55 (diamond)	Graphite, Coal
Cerium	Ce	140·25	6·73	Allanite, Cerite, Monazite
Chlorine	Cl	35·46	2·45	Halite
Chromium	Cr	52·0	6·74	Chromite
Cobalt	Co	58·97	8·50	Asbolane, Smaltite
Columbium (*see* Niobium).				
Copper	Cu	63·57	8·945	Sulphides and Carbonates
Dysprosium	Dy	162·5	...	Yttrium Earths
Erbium	Er	167·7	Er_2O_3=8·64	Gadolinite
Europium	Eu	152·0	...	Erbium Earths
Fluorine	F	19·0	1·14 (Liquid)	Fluorspar
Gadolinium	Gd	157·3	...	Gadolinite
Gallium	Ga	69·9	5·96	Zinc Blende
Germanium	Ge	72·5	5·47	Argyrodite
Glucinum (*see* Beryllium).				
Gold	Au	197·2	19·3 at 15·5° C.	Native, Pyritic and other sulphide ores
Helium	He	3·99	...	Atmosphere, Pitchblende
Hydrogen	H	1·008	·0695	Water
Indium	In	114·8	7·42	Zinc-blende
Iodine	I	126·92	4·95	Kelp, Soda Nitre
Iridium	Ir	193·1	22·42	Osmiridium
Iron	Fe	55·84	7·84 to 8·139	Hematite, Limonite, Magnetite
Krypton	Kr	82·92	2·82	Atmosphere
Lanthanum	La	139·0	6·05	Monazite, Allanite
Lead	Pb	207·10	11·3	Galena
Lithium	Li	6·94	0·59	Lepidolite, Spodumene
Lutecium	Lu	174·0	...	Yttrium Earths
Magnesium	Mg	24·32	1·75	Magnesite, Carnallite
Manganese	Mn	54·93	8·0	Psilomelane, Pyrolusite
Mercury	Hg	200·6	14·193	Cinnabar
Molybdenum	Mo	96·0	9·01	Molybdenite
Neodymium	Nd	144·3		
Neon	Ne	20·2	0·691	Liquid Argon
Nickel	Ni	58·68	8·9	Noumeaite, Pyrrhotite
Niton	Nt	222·4	...	Radium Emanation
Niobium	Nb	93·5	7·06	Columbite
Nitrogen	N	14·01	0·967	Atmosphere
Osmium	Os	190·9	22·47	Osmiridium
Oxygen	O	16·0	1·1056	Atmosphere
Palladium	Pd	106·7	11·8	Native Platinum and Palladium
Phosphorus	P	31·04	1·83-2·34 (varies with condition)	Phosphate of Lime
Platinum	Pt	195·2	21·5	Native Platinum
Potassium	K	39·10	0·88	Carnallite, Kainite Sylvite, Potash Felspar
Praseodymium	Pr	140·6		

Chemical Elements—*continued.*

Name.	Symbol.	Atomic Weight.	Specific Gravity.	Principal Sources.
Radium	R	226·4	...	Pitchblende, Pilbarite, Carnotite
Rhodium	Rh	102·9	12·1	Platinum Group
Rubidium	Rb	85·45	1·52	Lepidolite, Mineral Waters, Carnallite
Ruthenium	Ru	101·7	12·26	Platinum Group, Laurite
Samarium	Sa	150·4	$Sa_2O_3 = 8·35$	Samarskite
Scandium	Sc	44·1	$Sc_2O_3 = 3·8$	Euxenite
Selenium	Se	79·2	4·28	Selenides
Silicon	Si	28·3	2·49	Quartz
Silver	Ag	107·88	10·1-11·1 (varies with condition)	Argentite, Galena, and other silver-lead ores; Native Gold
Sodium	Na	23·0	0·97	Halite
Strontium	Sr	87·63	2·5	Strontianite, Celestine
Sulphur	S	32·07	1·92-2·05 (varies with condition)	Native, Iron Pyrites
Tantalum	Ta	181·5	16·64	Mangano-tantalite
Tellurium	Te	127·5	6·26	Tellurides
Terbium	Tb	159·2	..	Yttrium Earths
Thallium	Tl	204·0	11·9	Lorandite, Crookesite
Thorium	Th	232·4	11·0	Monazite, Thorite, Thorianite
Thulium	Tm	168·5	..	Erbium Earths
Tin	Sn	119·0	7·2	Cassiterite
Titanium	Ti	48·1	3·5 (amorphous); 4·87 (crystalline)	Rutile, Ilmenite
Tungsten	W	184·0	19·13	Wolfram, Scheelite
Uranium	U	238·5	18·7	Pitchblende, Pilbarite
Vanadium	V	51·06	5·5	Carnotite, Vanadinite
Xenon	Xe	130·2	3·52	
Ytterbium	Yb	172·0	$Yb_2O_3 = 9·175$	Gadolinite
Yttrium	Y	89·0	$Y_2O_3 = 5·046$	Yttrocerite, Gadolinite, Monazite
Zinc	Zn	65·37	6·9 to 7·2	Zinc Blende
Zirconium	Zr	90·6	4·2 (amorphous); 5·3 (crystalline)	Zircon

Cherry, F. J. (Warden)—

On New Gold Discovery at the Fullarton R., Cloncurry. Q.G.M. Jour., vol. 5, p. 517 (1904).

On Copper Mining on the Corella R., Cloncurry. Q.G.M. Jour., vol. 6, p. 136 (1905).

On Cape York Peninsular Goldfields. Q.G.M. Jour., vol. 8, pp. 430, 431 (1907).

On Tin and Wolfram Workings at Archer and Pascoe Rivers, Cape York Peninsula. Q.G.M. Jour., vol. 8, pp. 431-433 (1907).

On Wolfram and Copper on Noble Island. Q.G.M. Jour., vol. 9, p. 263 (1908).

On Bowden Wolfram Field, Pascoe River. Q.G.M. Jour., vol. 9, p. 264 (1908).

Cherry Gully, Stanthorpe. *Min.Ref.* Jasper, *see* 5641.

—— Tree Cr., 28 miles S.E. of Mackay. *Min.Ref.* Felspar, *see* 2642; Iron Pyrites, 5299.

Chert. A term applied to any impure flinty rock.

1410. ——. As nodules in limestones. Chillagoe, 139 miles W.S.W. of Cairns (Cairns-Chillagoe Rail.), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 61 (1887).

1411. ——. *Assoc.with* Limestone, Wollastonite, Garnet, Hematite, Magnetite, and Epidote. *Loc.* Mt. Lucy, 4 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 196, p. 9 (1905).

1412. ——. Springsure, 206 miles W.S.W. of Rockhampton (br. of Central Rail. line). *Co.* Denison; *Dist.* **Leichhardt.** *Ref.* P.R.S.Q., vol. 4, p. 64 (1887).

1413. —— *Assoc.with* Chalcedony, Hornstone, and Limestone. *Loc.* Limestone Hill, Ipswich, 24 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* B.D., G.S.M., and G.S.Q. Pub. 194, p. 58 (1904).

1413A. Chert. *Assoc.with* Andradite Garnet, Wollastonite, and Epidote, in granite and limestone. *Loc.* Diglum Cr., Barmundoo, 30 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 162, p. 10 (1901).

1414. ——. Port Moresby, 380 miles N.byE. of Cooktown, **British New Guinea.** *Ref.* G.S.M.

Cherwell Cr., trib. of Isaacs River, nr. Lake Elphinstone Stn. *Lat.*, 22° 5′-22° 20′; *Long.*, 148°-148° 13′. *Min.Ref.* Coal, *see* 1681.

—— ——, trib. of Isis R., Burrum Coalfield. *Min.Ref.* Coal, *see* 1811.

Chester Cr. Bore. *See under* Artesian Bores. No. 381.

Chesterfield Tin Claim, Thompson Cr., nr. Watsonville. *Min.Ref.* Cassiterite, *see* 1144.

Chesterton Co. Warrego Dist. *See map*, Pl. 18.

Cheviott Co. Mitchell Dist. *See map*, Pl. 18.

Chiastolite. *Var of* Andalusite. *Syn.* Cross-stone. *Compo.* Silicate of Alumina. *Colour*, white, grey, and brown. Section of crystals shows dark and light coloured crossed twinning. *H.* = 3-7·5, varies with degree of impurity.

1415. ——. *Assoc.with* inferior Graphite. *Loc.* Cape Upstart, between Bowen and Townsville. *Co.* Salisbury; *Dist.* **Kennedy North.**

1416. ——. Rookwood, 42 miles W.byS. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 125, p. 9 (1901).

1417. ——. In slate. Mt. Samford, Enoggera Range, 6½ miles W. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* L.C.B.

Childers, N.W. of Maryborough. *Lat.*, 25° 14′ S.; *Long.*, 152° 18′ E. *Min.Ref.* Ilmenite, *see* 4913.

GEOLOGICAL NOTE: The rock in the immediate vicinity consists of basalt overlying volcanic tuff. To the south the country is granite and Gympie Formation, and about two miles to the east there are outcrops of sandstones belonging to the Burrum Formation (Cretaceous). *See* G.S.Q. Pub. No. 170 (map).

CHAMBER OF COMMERCE: *See* D. Pettigrew.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 210.

Chillagite. *Compo.* Molybdo-tungstate of lead. *Percentages*—Pb., 54.2; Wo_3, 28.2; MO_3 17.5. *Colour*, Lemon yellow, brownish, H. 3.5, sp. gr. 7.5. *Cryst Form*, Tetragonal. *Habit*, tabular.

1417A. —— *Assoc.with* Cerussite and microcrystals of Pyromorphite, in quartzose ironstone gossan between granite and limestone. *Loc.* Saunder and Lyon's Christmas Gift North Mine, Chillagoe. *Ref.* L.C.B., Q.G.M. Jour., Feb. 1912, and Proc. Roy. Soc. N.S.W. 1912.

Chillagoe.

SITUATION: *See maps*, Pls. 8, 9, 22. On Chillagoe Creek, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Lat.*, 17° 17′ S.; *Long.*, 144° 33′ E.

RAILWAY BASE: For the Copper Mines of the Chillagoe Railway and Mines Limited, and for the Chillagoe Metallurgical Works. Mines in operation include Boomerang, Harper, McIlwraith, Penzance, Ruddygore, Zillmanton, Girofla, and Redcap.

POPULATION: (District) 4167 (Census 1911).

MINERAL STATISTICS: For years 1909 and 1910, *see under* Chillagoe; for previous years, *see under* Herberton—

Copper	*see tables,*	Pls. 39, 46, 46A.
Silver	,,	Pls. 37, 46, 46A.
Lead	,,	Pls. 38, 46, 46A.
Limestone and Ironstone	,,	Pls. 41, 46, 46A.

Gold. *See under* Hodgkinson Goldfield.

MINERAL REFERENCES: Silver (native), 7550; Lead (Anglesite) 28, (Cerussite) 1194-1194B, (Galena) 2790-2791, (Massicot) 6526, 6526A, (Wulfenite) 8049 (1); **Copper** (Atacamite) 129, (Azurite) 195, (Bornite) 418, (Copper Carbonate) 1892, (Copper, Native) 1994, (Copper Ore) 2028-2030, (Copper Oxide) 2048, (Copper Pyrites) 2168A-2169, (Cuprite) 2431, (Malachite) 5230, (Tenorite) 7723, (Tetrahedrite) 7763, (Tile Ore) 2550; Antimony (Stibnite) 7631; Manganese (dioxide), 6409, (Pyrolusite) 7117; Iron (Hematite) 4713, (Iron Pyrites) 5074, (Magnetite) 5990; Limestone, 636-638. Other Minerals: Apatite, 77; Aragonite, 87; Biotite, 306; Calcite, 607; Chert, 1410; Garnet, 3106, 3159A; Lazulite, 5722; Marble, 583; Satin Spar, 606; Staurolite, 7600. *Supplementary*—Chillagite, *see* 1417A.

Chillagoe—*continued.*

GEOLOGICAL NOTE: The rocks in the district are granite, schists, limestone, and garnet rock. Between the granite and the limestone the garnet rock occurs as an alteration product. Caves have been formed in the limestone in past ages, which subsequently have been filled with irregular deposits containing gold, silver, copper, and iron. These deposits with others of regular lode formation are now being worked. *See* G.S.Q. Pubs. Nos. 119, 134, 143 *for details. Note.*—From the occurrence of Halysites, a fossil coral, the limestones are considered to be Silurian.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 69 (1890), 119 (1897), 134 (1898). Map No. 220 (1909). *See under* Geol. Surv. Pub. List for title. *See also under* Govt. Mining Jour., Report No. 71. *Also see* Supplementary Report List, Nos. 82, 96.

MINING CENTRES, ETC.: *See under* Chillagoe Gold and Mineral Field.

GENERAL INFORMATION: *Same as under* Charters Towers.

LOCAL NEWSPAPERS: *The Standard, The Walsh and Tinaroo Miner.*

Chillagoe Caves, Calcifer. *Min.Ref.* Dog-tooth Spar, *see* 568; Satin Spar, 606; Stalactitic Calcite, 607; Stalagmitic Calcite, 612.

—— Cr., 6 miles S.byW. of Calcifer. *Min.Ref.* Atacamite, *see* 130; Lazulite, or Lapis Lazuli, 5722.

Chillagoe Gold and Mineral Field.

SITUATION: *See under* Chillagoe. *Cos.* Bolwarra, Dagmar, Hodgkinson, Lynd, Tate, and Wrotham; *Dist.* Cook. Centre about *Lat.* 17° 17′ S.; *Long.*, 144° 33′ E.

POPULATION: 5,345 (Warden's Estimate, 1910).

AREA: 6,144,000 acres = 9,600 square miles.

LEASES: Gold-mining leases and applications in force, 12; area, 173 acres. Mineral leases and applications, 208; area, 3,158 acres. Miners' homesteads, 424; area, 2,346 acres (1912).

PROCLAMATION OF FIELD: First (and only one) gazetted, 13th October, 1909, as follows:—Commencing at the confluence of the Walsh and Mitchell Rivers, and bounded thence by a line south to the north boundary of Eveleigh Block, by parts of the north and east boundaries of that block, the north and part of the east boundaries of Eveleigh No. 5 Block, the north and east boundaries of Eveleigh No. 4 Block; thence easterly by the northern boundaries of Brooklands No. 1, Fixby, Fixby No. 2, Springfield, and Fossilbrook Blocks, by part of the west, the northern, and eastern boundaries of St. Ronans Block, the east boundary of St. George Block, and by a line south to the Great Dividing Range, by that range northerly to where it is crossed by the Mount Garnet Railway; thence by that railway north-westerly to the Chillagoe Railway at Lappa Junction, by the Chillagoe Railway north-easterly to where it crosses the Great Dividing Range near the 11-mile peg from Mareeba Junction; thence by the said range northerly to the watershed between the Mitchell and Hodgkinson Rivers, by that watershed north-westerly of the eastern boundary of Cudgee Cudgee No. 1 Block, by part of that boundary southerly and the southern and western boundaries of same block westerly and northerly to the Mitchell River, by that river downwards to the McLeod River, by the McLeod River upwards to the south-east corner of Telgijah Block, by the east boundary of that block and by a line north to the south-eastern watershed of the St. George River, by that watershed westerly to the Mitchell River, and by that river downwards to the point of commencement.

MINING CENTRES: Almaden, Arbouin, Ashtonville, Bamford, Calcifer, Chillagoe, Fossilbrook, Kingsborough, Koorboora, Lancewood, Lappa Lappa, Mitchell River, Muldiva, Mungana, Northcote, O.K., Parada, Redcap, Tate River, Thornborough, Truxillo, Wolfram Camp, Woodville, Zillmanton, *which see.*

MINERAL STATISTICS: *See under* Chillagoe.

GEOLOGICAL PUBLICATIONS: *See under* Chillagoe.

WARDEN: Stationed at Chillagoe. INSPECTOR OF MINES: Stationed at Herberton.

REPORTS: Inspector's and Warden's monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

SMELTING WORKS: *See* under separate heading.

Chillagoe Mine, Oaks Goldfield. *Min.Ref.* Cerussite, *see* 1213A; Galena, 2811; Iron Pyrites, 5086A; Massicot, 6530A; Mispickel, 6706A; Zinc-Blende, 8089A.

—— Queen Mine, Dargalong. *Min.Ref.* Anglesite, *see* 31; Galena, 2793; Minium, 6583.

China Camp, nr. Bloomfield R., S. of Cooktown. *Min.Ref.* Cassiterite, *see* 828.

China Clay. *See* Kaolin.

Chinaman Group, Cloncurry. *Includes* Chinaman M.F. and Extd. M.L., Celestial Extd. M.C., Speculation M.C., and Speculation W. M.L. *Min.Ref.* Azurite, *see* 160; Chrysocolla, 1496; Copper Pyrites, 2073; Limonite, 5754; Malachite, 6100-6102; Tile Ore, 2500-2501.

—— M.F. (2453). *Min.Ref.* Limonite, *see* 5754; Malachite, 6101.

—— Cr., trib. of Mary R., W. of Blackall Range. *Min.Ref.* Galena, *see* 3074; Gold (alluvial) 3411, (reef) 4417A; Iron Pyrites, 5451; Manganese-dioxide, 6489; Silver, 7541, 7542.

—— Flat, Top Camp Diggings, Cloncurry. *Min.Ref.* Gold (alluvial), 3178, (nugget) 3435.

—— Gully, Lower Cape, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3265.

—— ——, trib. of Coen R., Coen Goldfield. *Min.Ref.* Gold (alluvial), *see* 3208.

—— —— (nr.), 2½ miles E. of Mt. Leyshon. *Min.Ref.* Cerussite, *see* 1226A, Galena, 2921A; Silver, 7480B.

—— and Duck Crs. (between). *Min.Ref.* Psilomelane, *see* 7079.

Chinchilla (Par. of (Por. 13v, etc.), S.W. of Chinchilla Rail. Stn. *Min.Ref.* Coal, *see* 1626A.

——. (Coal discoveries near). *See* G.S.Q. Pub. 235, p. 14 (1911). *See under* Geol. Surv. Pub. List for details. *See also under* Govt. Mining Jour., Report No. 99.

—— Bore. *See* Burncleuth No. 1 Bore *under* Coal Bores.

—— Head Stn., 7 miles S.W. of Chinchilla Rail. Stn. (Western line). *Min.Ref.* Opal (wood), *see* 7005.

Chine Bluff, Mackenzie R., N.W. of Rockhampton. *Min.Ref.* Copper, *see* 1854.

Chisholm's Bore. *See under* Artesian Bores. No. 272.

Chlorides: copper, *see* Atacamite; lead, Matlockite, Mimetite; silver, Cerargyrite; soda, Halite; ammonia, Sal Ammoniac.

Chlorine (Cl). *Atom.Wt.* = 35·46. *Sp.gr.* = 2·45. *Preparation.*—Chlorine is prepared electrolytically, or by heating manganese dioxide with hydrochloric acid. *Uses.*—It is largely used in the preparation of bleaching powder and disinfectants. *Compounds.*—Combines readily with hydrogen, to form hydrochloric acid, and with metals, to form chlorides, some of which are mentioned above.

MINERALS: *See* Chlorides above.

Chlorite. A general term for a large group of non-metallic minerals of indefinite composition, but which are soft, fine-grained, and greenish, and, when forming rock masses, are slaty or schistose in structure.

1418. ——. *Assoc.with* Redruthite, Azurite, Malachite, Ilmenite, Ironstone, Calcite, and Biotite, in granite, quartz, felspar, and schist. *Loc.* Mavis M.L. (315), Longamundi Group, Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 283, 284 (1908).

1419. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Cassiterite, Galena, and Zinc-Blende. *Loc.* Brilliant P.C., on Croydon-Esmeralda road, Stanhills Tinfield, between 12 and 32 miles S.E. of Croydon. *Co.* Esmeralda; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, p. 6 (1907).

1420. ——. *Assoc.with* Cassiterite, in granite and greisen. *Loc.* Douglas Mine, 10-Mile Cr., Stanhills Tinfield (*ante*). *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

1421. ——. *Assoc.with* Azurite, Malachite, and Chrysocolla, in quartzite, quartz, and gossan. *Loc.* Caine's King (M.L.) 577, Columbiad Group, Duck Cr., nr. Mt. Start, 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 142 and 143 (1908).

1422. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Limonite, Calcite, Actinolite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group, 1½ miles N.N.W. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

1423. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, and Calcite, in chloritic schist, gossan, and quartzite. *Loc.* Eva Extd. M.L. (283), Eva Group, 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 155 (1908).

1424. ——. *Assoc.with* Limonite and Calcite, in quartz. *Loc.* Block (25), M.L. (421), Hampden Group, 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 62 (1908).

1424A.——. *Assoc.with* Gold, Copper (native), Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Calcite, and Selenite, in quartz, quartzite, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub., pp. 219-224 (1908).

1425. ——. *Assoc.with* Gold and Magnetite (?). *Loc.* Iron Duke Reef, Croydon Goldfield, 94 miles (by rail) S.E. of Normanton. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 9 (1887).

1426. ——. *Assoc.with* Gold, Ironstone, and Graphite (impure), in quartz. *Loc.* Sir Walter Reef, ½-mile E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

1427. ——. *Assoc.with* Tourmaline and Olivine, in altered rock. *Loc.* No. 1 Cutting, Biggenden Mine, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 60, p. 1 (1890).

1428. ——. *Assoc.with* Turgite. *Loc.* On hill, 1 mile N.E. of junction of Cadarga and Auburn Rivers. *Co.* Newcastle; *Dist.* Burnett. *Ref.* L.C.B.

1429. ——. *Assoc.with* Cassiterite, Tourmaline, and Mispickel, in quartz. *Loc.* Dodd's Tin Claim, nr. head of Byer's Gully, trib. of James's Cr., 20 miles S. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

1430. ——. *Assoc.with* Cassiterite and Turgite. *Loc.* Black Rock Extd. Mine, Eureka Cr., nr. Stannary Hill, Chillagoe Br. Rail., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 39 (1897).

1431. ——. *Assoc.with* Cassiterite. *Loc.* Eclipse Mine, Eureka Cr., Stannary Hills (*ante*). *Ref.* G.S.Q. Pub. 125, p. 45 (1897).

1432. ——. *Assoc.with* Cassiterite and Bismuthinite. *Loc.* Gt. Southern Mine, Irvinebank, 12 miles W.S.W. of Herberton, 10 miles S.W. of Stannary Hills, Chillagoe Br. Rail., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 47 (1897).

1433. ——. *Assoc.with* Cassiterite and Bismuth. *Loc.* Vulcan Tin Mine, Irvinebank (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 54 (1900).

1434. ——. *Assoc.with* Cassiterite, Rock Crystal, and Mica, in quartz lode. *Loc.* Just-in-Time Mine, nr. Ragged Cr., Montalbion, 7 miles S.W. of Stannary Hills, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 33 (1897).

1435. ——. *Assoc.with* Cassiterite and Garnet. *Loc.* Boulton's Folly, Watsonville, 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 26 (1883).

1436. ——. *Assoc.with* Cassiterite. *Loc.* Day Dawn Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

1437. ——. *Assoc.with* Cassiterite, Iron Pyrites, Wolfram, Fluorspar, and Chalcanthite. *Loc.* Glencairn Tin Mine, Watsonville ((*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

1438. ——. *Assoc.with* Cassiterite and Native Bismuth. *Loc.* Herbertina Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

1438A.——. *Assoc.with* Copper Pyrites, Cassiterite, Mispickel, Galena, Wolfram, and Garnet, in greywacke. *Loc.* King of the Ranges Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 222, pp. 41-50 (1910).

1439. ——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, Malachite, Iron Pyrites, Mispickel, Cassiterite, Stannite, Wolfram, Ironstone, and Fluorspar, in quartz. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 25 (1883), and 119, p. 15 (1897).

1440. ——. *Assoc.with* Cassiterite and Garnet. *Loc.* Strüber's Tin Mine, Watsonville (*ante*). *Ref.* G.S.M.

1441. Chlorite. *Assoc.with* Cassiterite and Mispickel, in quartz. *Loc.* Ulster Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 22 (1883).

1442. ——. *Assoc.with* Cassiterite. *Loc.* Gladstone Tin Mine, California Gully, nr. Ord (Mt. Garnet Rail.), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook.

1443. ——. *Assoc.with* Cassiterite. *Loc.* Koorboora, 108 miles S.W. of Cairns (Cairns-Chillagoe Rail.), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

1444. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Azurite, Mispickel, and Zinc-Blende, in quartz, greisen, and slate. *Loc.* Ballandean Mine, Severn R., 14 miles (by rail) S. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* L.C.B.

1445. ——. *Assoc.with* Copper Pyrites, Mispickel, Cassiterite, Wolfram, Zinc-Blende, Calcite, and Orthoclase. *Loc.* Sundown Copper Mine, Sundown Cr., 12 miles S.W. of Ballandean Rail. Stn., 26 miles (by rail and road) S.W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay: See* No. 2192. *Ref.* G.S.Q. Pub. 191, p. 22 (1904), G.S.M., and B.D.

1446. ——. *Assoc.with* Cassiterite. *Loc.* Alhambra 1 and 2 Mines, Coolgarra, Return Cr., 9 miles N.N.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 125, p. 44 (1897).

1447. ——. *Assoc.with* Cassiterite. *Loc.* Beaconsfield Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 125, p. 47 (1897).

1448. ——. *Assoc.with* Cassiterite, Malachite, Azurite, Iron Pyrites, Göthite, Hematite, Limonite, Mispickel, Wolfram, Penninite, Fluorspar, Websterite, and Topaz. *Loc.* Tin Mines, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

1449. ——. *Assoc.with* Cassiterite. *Loc.* ½-mile N. of Coolgarra (*ante*). *Assay:* Metallic Tin = 33 per cent. *Ref.* A.R., 1907, p. 36.

1450. ——. *Assoc.with* Cassiterite, Mispickel, Hornblende, Steatite, Biotite, and Orthoclase, in quartzose dyke. *Loc.* Gt. Northern P.C. Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 3 (1883), and P.R.S.Q., vol. 15, p. 54 (1900).

1451. ——. *Assoc.with* Cassiterite, in elvan dyke. *Loc.* Irish National League Claim, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 6 (1883).

1452. ——. *Assoc.with* Cassiterite and Wolfram, in veins of quartz. *Loc.* Perseverance Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 19 (1883).

1453. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Queen Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 19 (1883).

1454. ——. *Assoc.with* Cassiterite, Wolfram, Orthoclase, Steatite, and Serpentine, in quartz. *Loc.* Soggaorth Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 6 (1883), and P.R.S.Q., vol. 4, p. 71 (1887).

1455. ——. *Assoc.with* Cassiterite, in elvan dyke. *Loc.* Southern Cross Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 5 (1883).

1456. ——. *Assoc.with* Cassiterite. *Loc.* Stenhouse's Tin Mine, Newellton (Silver Valley), 9 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 125, p. 44 (1897).

1457. ——. In serpentinous rock. Newellton (Silver Valley) (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

1458. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc-Blende, as vein in quartz. *Loc.* Bryan O'Lynn Mine (Queen Reef), Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville (Gt. Northern line). *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, pp. 36, 49 (1887).

1459. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Zinc-Blende, Calcite, and Gypsum, in quartz. *Loc.* Queen Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 26 (1879), P.R.S.Q., vol. 4, pp. 36 and 37 (1887), G.S.M., and W.C.T.

1460. ——. *Assoc.with* Copper Carbonate, Calcite, and Garnet, in lode. *Loc.* Running R. North Lease (164), nr. Running R. Crossing, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

1461. ——. *Assoc.with* Gold, Iron Pyrites, Ironstone, and Malachite, in quartz reef. *Loc.* Normanby Goldfield, head of Spring Cr., 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 5, p. 7 (1879).

1461a.——. *Assoc.with* Copper Pyrites, Iron Pyrites Tile Ore, Malachite, Azurite, and Calcite, in slate and granite. *Loc.* MacFadzen's M.F. (1749), Douchang, Flora, Essie Dozzler, and Green Outcrops Lodes, Mt. Flora Gold and Mineral Field. *Co.* Killarney; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 228, pp. 31-35 (1910).

1462. ——. *Assoc.with* Steatite and Ironstone, in shale and diorite. *Loc.* Keeley and Valentine's Claim, Nuggety Gully, Mt. Britton Goldfield, 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

1463. ——. *Assoc.with* Iron Pyrites, Galena, Massicot, and Mispickel. *Loc.* Blackbutt, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* O.R.

1464. ——. *Assoc.with* Hematite and Calcite. *Loc.* Caboombah, 12 miles N.N.E. of Esk, 55 miles (by rail and road) N.N.E. of Ipswich. *Co.* Cavendish (*ante*).

1465. ——. *Assoc.with* Copper Pyrites, Cuprite, Tenorite, Bornite, Malachite, Azurite, Galena, Zinc-Blende, Hematite, Magnetite, Garnet, and Calcite. *Loc.* Glassford Cr. Copper Mines, Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn. (North Coast line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pubs. 150, pp. 5-7 (1900), and 194, p. 28 (1904).

1466. ——. *Assoc.with* Rhodochrome (*var.* of Penninite), and Chromite, in serpentine. *Loc.* Flat Top Range, nr. Balnagowan Stn., 22 miles E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 159, p. 18 (1901).

1467. ——. *Assoc.with* Gold and Calcite. *Loc.* Rosewood Goldfield, 32 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Douglas. *Ref.* P.R.S.Q., vol. 4, p. 73 (1887), and G.S.M.

1468. ——. In quartz reefs. Quartz Is., Duke Group, Northumberland Island, 40 to 45 miles N.E.byE. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* L.C.B.

1469. ——. *Assoc.with* Augite, in altered sedimentary rock. *Loc.* Great Monkland Lease (629), Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 52, p. 18 (1889).

Chloropal. *Compo.* Hyd. silicate of iron. *Colour*, shades of green. Fragile. *Fracture*, conchoidal to earthy. *H.* 2·5-4·5. *Sp.gr.* 1·7-2·1.

1470. ——. *Assoc.with* Manganese-dioxide, in slates and quartzites. *Loc.* Nr. Jetty, Auckland Point, 1 mile N.W.byN. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* A.R., p. 153 (1908), and B.D.

Chollarton, nr. Collingwood. *Min.Ref.* Gypsum, *see* 4616a.

Chowey Goldfield—

Situation: *See maps*, Pls. 4, 5. Junction of Didcot and Chowey Crs., 6 miles N. of Didcot Rail. Stn., 74 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. Centre about *Lat.* 25° 25′ S.; *Long.*, 161° 57′ E.

Discovered in 1870.

Proclamation of Field: First (and only one) gazetted, 18th May, 1905, as follows:—Commencing on the left bank of Chowey Creek at the western extremity of the south-east boundary of designed portion 31v, and bounded thence by that portion bearing 71 degrees 56 minutes thirty-four chains and ninety-five links, and 357 degrees 59 minutes sixty chains and forty and three-tenths links; thence by lines bearing 89 degrees eighteen chains fifty and six-tenths links and 56 degrees seventeen chains and fifty links; thence by a line and designed portion 34v bearing 89 degrees 56 minutes sixteen chains and fifty-four links, again by that portion and a line bearing 179 degrees 56 minutes twenty-seven chains and eighty-three and six-tenths links; thence by portion 10v bearing 254 degrees 21 minutes four chains and three and three-tenths links and 320 degrees 29 minutes seven chains and twenty-nine and nine-tenths links, again by that portion and portion 32v bearing 179 degrees 54 minutes seventy-four chains and thirty-six and four-tenths links and 223 degrees 21 minutes fifty-three chains and sixty-two and three-tenths links; thence by a road one hundred and fifty links wide bearing 284 degrees thirty-seven minutes twelve chains and fifty-five and three-tenths links, 324 degrees 3 minutes twenty-one chains and sixty and four-tenths links, and 290 degrees 12 minutes twenty chains and fifty-seven and six-tenths links; thence by portion 31v aforesaid bearing 12 degrees 27 minutes nine chains and forty-one links to the right bank of Chowey Creek; thence by a line crossing said creek in a easterly direction to the left bank of that creek; and thence by that creek upwards to the point of commencement.

Chowey Goldfield—*continued.*

Mineral References: Gold, *see* 3573; Molybdenite, 6819, 6820; Molybdite, 6868.

Mineral Statistics: Included in "Other Goldfields." *See* Pls. 36, 46-46A, 47.

Geological Note: The country rocks are granite and slate. Near their junction the granite is syenitic, but away from the plane of contact it gradually becomes micaceous. The Chowey reefs lie in a defined belt in the granite.

Geological Publications: Reports—Nos. 25 (1886), 60 (1890). *See under* Geol. Surv. Pub. List for title.

Warden: Stationed at Maryborough. Inspector of Mines at Rockhampton.

Chowey Mine (Old), Chowey Cr., W. of Maryborough. *Min.Ref.* Gold, *see* 3573; Molybdenite, 6820; Molybdite, 6868.

—— and Didcot Crs. (junction of), 62 miles W. of Maryborough. *Min.Ref.* Gold, *see* 3571; Ironstone, 5511; Manganese-dioxide, 6396.

Christensen (I.) Danish Consul. Report on Olsen's Caves, near Rockhampton. Q.G.M. Jour., p. 573 (1903).

Christian's Cr., Sugarloaf, Stanthorpe. *Min.Ref.* Wolfram, *see* 8000.

Christie and Party's Coal Area, 38-Mile Railway Peg, Cooktown. *Min.Ref.* Coal, *see* 1602.

—— Coal Seam, Deighton R., W.byN. of Cooktown. *Min.Ref.* Coal, *see* 1603.

—— Copper Lode, Cattle Cr., W.S.W. of Mackay. *Min.Ref.* Bornite, *see* 429B; Copper Pyrites, 2253A.

Christmas Cr., Beaudesert, S.byE. of Brisbane. *Min.Ref.* Chalcedony, *see* 1360; Opal (common), 6993.

—— Cr. (Swiper's Flat), Mulgrave R., Russell Extd. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3221; Ironstone, 5533.

—— Gift Mine, Chillagoe. *Min.Ref.* Cerussite, *see* 1194B; Wulfenite, 8049 (1).

—— Hill, The Springs, Clermont. *Min.Ref.* Gold (alluvial), *see* 3340; Limonite, 5890.

——, ——. E.S.E. of Percyville. *Min.Ref.* Gold (alluvial), *see* 3235A, (reef) 3791A.

—— Reef, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 4163.

—— Shaft, Chillagoe. *Min.Ref.* Copper Ore, *see* 2029.

Chromate of Iron. *See* Chromite.

1471. **Chrome-bearing Talc** (emerald green), in quartz reef. Head of Dead Horse Lead, ¾-mile S. of Clermont Rail. Stn. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* B.D.

Chrome Iron. *See* Chromite.

Chrome Ochre. *Compo.* A clayey material, containing chromium oxide in varying percentages. *Colour*, green.

1472. —— ——. *Assoc.with* Chromite, in serpentine containing gold. *Loc.* Mt. Wheeler, 18 miles N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 69 (1887).

Chrome Pigments. *See* List under Pigments.

Chrome Spinel. *See under* Spinel.

Chromite. *Syn.* Chrome Iron. *Compo.* Chromate of iron. *Colour*, usually iron-black. *Streak*, brown. Sub-metallic. *H.* = 5·5. *Sp.gr.* = 4·3. *Contents (max.)*, Chromic Acid, 68 per cent. (= Chromium 47 per cent.).

Geological Note: There is a large number of places in the serpentine belt to the north-east of Rockhampton where Chromite is to be found, and it occurs extensively in serpentine in the Kilkivan district. Large deposits exist near Ipswich, at Pine Mountain, and other less important outcrops are known at Stanthorpe. For uses of Chromite, *see under* Chromium.

1473. ——. In 4-foot lode. Junction of Quart Pot and Kettle Swamp Crs., Stanthorpe. 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* **Darling Downs** *Ref.* B.D.

1474. ——. In diorite. Minnie Cr., Bonnie Doon Stn., about 6 miles N.W. of Blackwater, 125 miles (by rail and road) W.byS. of Rockhampton. *Co.* Humboldt; *Dist.* **Leichhardt.** *Ref.* G.S.M.

1475. ——. In serpentine. Pine Mt., 7 miles N.N.W. of Ipswich, 31 miles (by rail) W.S.W. of Brisbane. *Co.* Churchill; *Dist.* **Moreton.** *Assay:* Iron = 13 per cent.; Chromium = 23 per cent.; (Chromic acid = 33·5 per cent). *Ref.* G.S.Q. Pubs. 103, p. 27 (1895), and 194, pp. 55, 56 (1904).

1476. ——. Por. 29, Par. of Sahl, 11 miles N.N.W. of Ipswich. *Co.* Churchill (*ante*). *Analysis:* Iron = 13 per cent.; Chromium = 23 per cent.; (Chromic acid = 33·5 per cent. *Ref.* G.S.Q. Pub. 194, p. 55 (1904).

1477. ——. Between Cabbage Tree and Banks Crs., Brisbane R., about 8 miles N. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.M.

1478. ——. B.K. Cattle Station, 12 miles N.W.byN. of Ipswich. *Co.* Stanley (*ante*). *Ref.* O.R.

1479. ——. *Assoc.with* Ilmenite, in serpentine. *Loc.* Near Canoona Goldfield, 26 miles N.byW. of Rockhampton. *Co.* Liebeg; *Dist.* **Port Curtis.** *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

1480. ——. Oaks View, 4 miles N. of Oaks Stn., 45 miles (by road) N.N.W. of Rockhampton. *Co.* Liebeg (*ante*). *Analysis:* Ferrous oxide = 16 per cent.; Chromium = 24·9 per cent. (Chromic acid = 36·4 per cent.). *Ref.* A.R., 1906, p. 54.

1481. ——. Princhester, 44 miles N.W. of Rockhampton. *Co.* Liebeg (*ante*). *Analysis:* (1) Chromium = 22·8 per cent. (Chromic acid = 33·2 per cent.); (2) Chromium = 25·0 per cent. (Chromic acid = 36·6 per cent.); (3) Chromium = 23·0 per cent. (Chromic acid = 33·5 per cent.). *Ref.* A.R., pp. 61 and 73 (1906).

1482. ——. In irregular masses in large formation between walls of limestone and serpentine. *Loc.* Kearney's Paddock, foot of Constitution Hill, Cawarral Goldfield, 15 miles N.N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Analysis:* (Chromic acid = 48·0 per cent.); Silica = 12·5 per cent.; Iron = 11·8 per cent.; Chromium = 32·9 per cent. *Ref.* A.R., p. 109 (1907), and B.D.

1483. ——. *Assoc.with* Rhodochrome and Chlorite, in serpentine. *Loc.* Flat Top Range, nr. Balnagowan Stn., 22 miles E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 159, p. 18 (1901).

1484. ——. Meadow Flats, N. side of Fitzroy R., nr. Rockhampton. *Co.* Livingstone (*ante*). *Analysis:* Iron = 10·2 per cent.; Silica = 3·6 per cent.; Chromium = 26·2 per cent.; (Chromic acid = 38·1 per cent.). *Ref.* A.R., 1905, p. 31, and B.D.

1485. ——. In lode. Morinish Goldfield, 25 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* B.D.

1486. ——. *Assoc.with* Gold and Chrome Ochre, in serpentine. *Loc.* Mt. Wheeler, 18 miles N.E. of Rockhampton. *Co.* Livingstone (*ante*).

1487. ——. Tooker's Hill, nr. Tungamull Rail. Stn. (Emu Park line), 18 miles (by rail) N.E.byE. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 216, p. 32 (1907), and A.R.D.M., 1907, p. 107.

1488. ——. Tungamull, 18 miles (by rail) N.E.byE. of Rockhampton (Emu Park line) (*ante*). *Assays:* (1) Chromium = 32·8 per cent. (Chromic acid = 47·8 per cent.); (2) Chromium = 35·0 per cent. (Chromic acid = 51·0 per cent.). *Ref.* A.R., 1907, p. 94.

1488A.——.*Assoc.with* Serpentine (?). *Loc.* Four miles S.E. of Tungamull Rail. Stn. (*ante*). *Note:* Quarry face of clean chromite is 40 ft. by 20 ft., and apparently extends for 25 chains.

1489. ——. Harley's P.A., 4 miles S. of Kilkivan, 48 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* **Wide Bay.** *Assay:* Chrome acid = 30·6 per cent. (Chromium = 21·0 per cent.). Ferrous oxide = 13·9 per cent. *Ref.* A.R., p. 71 (1906).

Chromium (Cr). *Atom.Wt.* = 52·0. *Sp.gr.* 6·74. *Colour*, white-metallic.

Minerals: *See* Chromite, Chrome Ochre, Penninite, *var.* Rhodochrome. *See also* Note under Chromite.

Uses: The alloy called ferro-chromium is used in the manufacture of exceedingly hard steel, and compounds of the element are applied extensively in tanning and dyeing processes, and in paint-making. Chromite is the mineral from which most chromium compounds are made, and is itself sometimes used as a lining for reverberatory furnaces. Bricks made of chromite mixed with clay are now being manufactured by the Mt. Morgan Gold Mining Co.

Chrysoberyl.

No occurrences are recorded in the State, but peculiarities in some of the small rare gemstones occurring at Anakie suggest that they may be chrysoberyls. More material is required before the matter can be investigated.

Chrysocolla. *Compo. Hyd.* Silicate of copper. *Colour*, usually bluish-green. *Streak*, whitish. *Texture*, enamel-like. *H.* = 2-4. *Sp.gr.* = 2-2·2. *Contents (max.)*, Copper 36 per cent.

1489A.——. *Assoc.with* Copper Pyrites, Malachite, and Limonite. *Loc.* Cameronian M.C. (196), Euston Group, Cameron R., 27 miles W.N.W. of Cloncurry. *Co.* Argylla. *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, p. 267 (1908).

1490. ——. *Assoc.with* Copper Pyrites and Redruthite, in schist, slate, and quartz. *Loc.* Native Companion R.C. (19), Native Companion Group, Palm Tree Cr., 26½ miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 273 and 274 (1908).

1491. ——. *Assoc.with* Redruthite, Cuprite, Bornite, Copper Carbonate, and Ironstone. *Loc.* Mt. Douglas or Pumpkin Gully Copper Leases, 12 miles E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub., pp. 6, 7 (1900).

1491A.——. *Assoc.with* Redruthite, Cuprite, Tile Ore, Malachite, and Limonite, in quartz and quartzite. *Loc.* Rocklands Group of Copper Mines, between Butcher and Morris Crs., 9 miles W. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 258-265 (1908).

1492. ——. *Assoc.with* Gold and Lievrite, in clayey talcose material. *Loc.* Agate Downs Goldfield (Tip Top Camp), nr. Maggie's Cr., S. of Cloncurry R., 50 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 104, p. 6 (1895), and G.S.M.

1493. ——. *Assoc.with* Tile Ore and Malachite, in gossan, schist, and quartz. *Loc.* Alice M.L. (717), Alice Group, 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 162-164 (1908).

1494. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Hematite, Limonite, and Turgite, in quartz, calcite, and gossan. *Loc.* Belfast M.L. (303), Belfast Group, 2 miles N.N.E. of Mt. Start, 21 miles S.S.W. of Cloncurry (*ante*). *Assay: See* No. 2071. *Ref.* G.S.Q. Pub. 215, pp. 120-122 (1908).

1495. ——. *Assoc.with* Copper Pyrites, Tile Ore, Redruthite, Hematite, and Limonite, in quartz and ferro-calcite. *Loc.* Policeman Copper (M.C.) 206, Boomerang Group, Cone Cr., 23 miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 100 and 101 (1908).

1496. ——. *Assoc.with* Tile Ore and Malachite, in schist and quartz. *Loc.* Speculation M.C. (198), nr. Mt. Start, Chinaman Group, 23½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 150-152 (1908).

1497. ——. *Assoc.with* Azurite, Malachite, and Chlorite, in quartzite, quartz, and gossan. *Loc.* Caine's King Copper Lease (577), Columbiad Group, Duck Cr., nr. Mt. Start, 24½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 142 and 143 (1908).

1498. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, and Azurite, in gossan, quartz, and quartzite. *Loc.* Captain M.L. Eva Group, 22½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 158, 159 (1908).

1499. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Malachite, in quartz and calcite. *Loc.* Commonwealth M.C. (330), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 158 (1908).

1500. ——. *Assoc.with* Malachite, Atacamite, Dioptase (?), and Tourmaline, in schist. *Loc.* Weka M.C., Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 159 and 160 (1908).

1501. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Malachite, Iron Pyrites, Limonite, Turgite, Calcite, and Ferro-Calcite, in quartzite, schist, and limestone. *Loc.* Florence River Copper Leases, ½-mile W. of Hampden Rd., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 69-78 (1908).

1502. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tenorite, Malachite, Iron Pyrites, and Kaolin, in gossan, slates, and diorite. *Loc.* Hampden M.Ls. (244, 245, etc.), Hampden Group, 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 49-60 (1908).

1503. ——. *Assoc.with* Redruthite, Malachite, and Limonite, in quartzite and schist. *Loc.* Lady Jenny M.L. (234), Lady Group, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 195 (1908).

1504. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite, in gossan, quartzite, and schist. *Loc.* McPhail M.L. (474), McPhail Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 70-72 (1908).

1505. ——. *Assoc.with* Redruthite, Malachite, Iron Pyrites, Dioptase, and Limonite, in gossan, turgite, and schist. *Loc.* Trump Extd. M.C. (368), McPhail Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 73 76 (1908).

1505A.——. *Assoc.with* Gold, Copper (native), Copper Pyrites, Malachite, Atacamite, Dioptase, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 219-224 (1908).

1505B.——. *Assoc.with* Copper Pyrites, Redruthite, Hematite, and Hypersthene, in slate and gossan. *Loc.* Spring's Peak M.L. (562), Pearl Group, Corella R., 30 miles W.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 189 (1908).

1506. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, Azurite, Hematite, and Limonite, in slate. *Loc.* Easter Gift Copper Lease (290), (Pioneer Chief Group), 1 miles E. of Mt. Start, W. of Marabah Township, Duck Cr., 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 127-129 (1908).

1507. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Limonite, and Turgite, in slate and quartz. *Loc.* Highland Mary Lease (531), Ready Rhino Group, Duck Creek, 23½ miles S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 91-93 (1908).

1508. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, Malachite, Iron Pyrites, and Limonite, in schist, slate, quartzite, and quartz. *Loc.* Banjo M.L. 590, Tambourine Group, Duck Cr., 26 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 167, 168 (1908).

1509. ——. *Assoc.with* Copper Pyrites, Redruthite, Azurite, Malachite, Iron Pyrites, Limonite, and Tourmaline, in schist, slate, and quartz. *Loc.* Tambourine Copper Lease (286), Tambourine Group, Duck Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 166 and 167 (1908).

1510. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Limonite, and Turgite, in schist and quartz. *Loc.* Brilliant Copper Lease (588), Tharsis Group, 1½ miles N.W. of Mt. Start, 20 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp 114 and 115 (1908).

1511. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Malachite, and Limonite, in gossany quartz and calcareous sinter. *Loc.* Boundary M.L. (582), Bull Cr. Group, Coolullah Run, 74 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 345-347 (1908).

1511A.——. *Assoc.with* Malachite, in siliceous gossan. *Loc.* Decima M.C. (304), Bull Cr. Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 347, 348 (1908).

1511A1.——. *Assoc.with* Limonite and Malachite, in quartz. *Loc.* Elsie M.C. (?), Dobbyn Group, Coolullah Run, 70½ miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 342, 343 (1908).

1512. ——. *Assoc.with* Native Copper, Cuprite, and Limonite, in schist and quartzite. *Loc.* Little Wonder M.L. (258), Mighty Atom Group, 6-Mile Cr., Leichhardt R., 42 miles N.W.byN. of Cloncurry. *Co.*Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 310 and 311 (1908).

1513. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Azurite, Malachite, and Limonite, in schist, slate, and gossan. *Loc.* Mighty Atom M.L. (274), Mighty Atom Group, between 6-Mile and Coppermine Crs., Leichhardt R. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 304-306 (1908).

1514. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, and Limonite, in schist, gossan, and quartz. *Loc.* Mt. Cuthbert No. 1 N. M.L. (381), Mt. Cuthbert Group, 6-Mile Cr., Leichhardt R., 19 miles S.W. of Coolullah H.S., 63 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 318-321 (1908).

1515. Chrysocolla. *Assoc.with* Copper Pyrites, Malachite, Iron Pyrites, Limonite, Ironstone, and Magnesite, in kaolinised schist. *Loc.* Mt. Cuthbert 1 and 2 S. M. Ls. (257 and 396), Mt. Cuthbert Group, 19 miles S.W. of Coolullah H.S. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 321 and 322 (1908).

For further Cloncurry References *see* Nos. 1522-1524.

1516. ——. *Assoc.with* Gold, Malachite, and Jasper, in quartz. *Loc.* F. Achilles's Mine, Brovinia Goldfield, Hawkwood, 50 miles S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 114, p. 3 (1896), and G.S.M.

1517. ——. *Assoc.with* Cuprite, Tile Ore, Tenorite, Azurite, Malachite, Magnetite, and Hematite, in garnet rock. *Loc.* Boomerang Copper Mine, Marble Cr., Calcifer, 133 miles (by rail) W.S.W. of Cairns, Cairns-Chillagoe line, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 119, p. 36 (1897).

1518. ——. Muldiva Silver-Lead Mines, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

1519. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Malachite, Azurite, and Fluorspar, in garnet rock. *Loc.* Dorothy Mine, Opera Cr., 1½ miles S.E. of Mungana Rail. Stn. (Chillagoe line), 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 2 (1891), and B.D.

1520. ——. *Assoc.with* Malachite and Lithomarge, in quartzite. *Loc.* McIlwraith Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 6 (1891).

1521. ——. *Assoc.with* Copper Pyrites, Cassiterite, Wolfram, and Mispickel, in quartz lode. *Loc.* Great Eastern Mine (Block 24), Red Rock Cr., 11 miles W.S.W. of Ballandean, 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 49 (1898).

1522. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Redruthite, Cuprite, Limonite, and Malachite, in hornblendic schist. *Loc.* Mt. Birnie M.L. (686, etc.), Mt. Birnie Group, Burke R., 74½ miles S.S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, p. 367 (1908).

1523. ——. *Assoc.with* Copper Pyrites, Malachite, Covellite, and Iron Pyrites, in quartz, quartzite, and schist. *Loc.* Ardath Copper Lease (656), Mt. Hope Group, Green's Cr., 4 miles S.W. of Mt. Hope, 53 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 47 and 48 (1908).

1524. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite, in quartz and kaolin. *Loc.* Trickelana Copper Lease (522), Trickelana Group, 70 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, p. 26 (1908).

For other Cloncurry References *see* Nos. 1489A to 1515.

1525. ——. Lucky Prop Mine, nr. Charters Towers, 82 miles (by rail) S.W. of Townsville. *Co.* Davenport; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 68 (1887).

1526. ——. *Assoc.with* Copper Carbonate, Galena, Cerussite, Manganese-dioxide, and Garnet, in quartz. *Loc.* Black Star Lease (116), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

1527. ——. *Assoc.with* Native Silver, Galena, Cerussite, Malachite, Mispickel, Manganese-dioxide, Zinc-Blende, and Hematite, in lode. *Loc.* Hidden Treasure Lease (165), Kangaroo Hills Mineral Field (*ante*). *Assays: See* No. 1241. *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), and 82, p. 7 (1892).

1528. ——. *Assoc.with* Bornite, Copper carbonate, and Mispickel, in chloritic matrix, *Loc.* Ingola Lease (177), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

1529. ——. *Assoc.with* Copper Carbonate, Minium, Cerussite, Galena, Hematite, and Zinc-Blende, in gossan lode. *Loc.* White Wings P.A., Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

1530. ——. *Assoc.with* Malachite, Galena, Cerussite, Manganese-dioxide, Lievrite, and Garnet, in lode. *Loc.* Mt. Hishon Lease (210), Kangaroo Hills Mineral Field (*ante*). *Assay: See* No. 2969. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

1531. ——. *Assoc.with* Copper (native), Copper Pyrites, Cuprite, Atacamite, Copper Carbonate, Limonite, Cerussite, Manganese-dioxide, Zinc-Blende, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

1532. ——. *Assoc.with* Galena, Cerussite, Pyrolusite, Gypsum, and Calcite, in garnet rock. *Loc.* Elsie's Shaft, Mt. Moss South Lease (168), Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 16 oz. per ton; Lead = 69·8 per cent.; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

1533. ——. *Assoc.with* Native Copper, Malachite, and Azurite. *Loc.* Keelbottom Copper Mine, Mt. Keelbottom, 21 miles N.W.byN. of Charters Towers. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 43 (1887).

1534. ——. *Assoc.with* Copper (native) and Malachite. *Loc.* E. of Townsville Road, nr. Dalrymple. *Co.* Wilkie Gray (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 68 (1887).

1534A.——. *Assoc.with* Malachite and Hematite, in granite. *Loc.* Brown's M.F. (1807), Native Youth P.P.A. (129), and Paddock Workings, Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 228, pp. 21, 39 (1910).

1534B.——. *Assoc.with* Malachite and Azurite, in gossan in granite. *Loc.* Marjorie M.L. (31), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 35, 36 (1910).

1535. ——. *Assoc.with* Cuprite and Asbestos, in decomposed rock. *Loc.* Cabbage Tree Cr., Princhester Run, 12 miles from Marlborough, 45 miles N.W. of Rockhampton. *Co.* Liebeg; *Dist.* **Port Curtis.** *Ref.* A.R., 1907, p. 85.

1536. ——. *Assoc.with* Copper Carbonate, in lode. *Loc.* On hill, nr. beach, 3 miles N. of Marion Cr., 43 miles S. of Mackay. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 39, p. 10 (1887).

1537. ——. Louisa Lode, Gigoomgan Stn., 25 miles W.S.W. of Maryborough. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.M.

1537A.——. **Cyanochalcite** (*var.*) *Assoc.with* Native Copper, Redruthite, Cuprite, Malachite, Limonite, Calcite, and Ferro-calcite, in granular limestone. *Loc.* Dandy P.A. (297), McPhail Group, 2 miles S. of Florence R., 33 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 76 and 77 (1908).

Chrysolite. *Syn.* Olivine, *which see.*

Chrysoprase. *Var. of* Chalcedony, *which see.*

Chrysotile Asbestos. *Var. of* Serpentine, *which see.*

Chudleigh Co.; Burke Dist. *See map*, Pl. 20.

—— Park Stn., 70 miles N. of Hughenden. *Min.Ref.* Ilmenite, *see* 4881.

Chum M.C. (329), Serpent Hill Group, Cloncurry. *Min.Ref.* Cuprite, *see* 2392B; Limonite, 5748B; Malachite, 6087B; Redruthite, 7208B; Tile Ore, 2493B.

Churchill, Pine Mt., nr. Ipswich. *Min.Ref.* Magnesite, *see* 5954.

—— Co.; Moreton Dist. *See map*, Pl. 6.

Chuwar (Par. of), Ipswich. *Min.Ref.* Clay Ironstone, *see* 1588.

Cimolite. *Compo.* Silicate of alumina. *Colour*, white. Clay-like. Adheres to the tongue. *Sp.gr.* = 2·2.

1538. ——. Hughenden, 140 miles (by rail) W.N.W. of Charters Towers. *Co.* Douglas; *Dist.* Burke. *Ref.* L.B. 3, p. 727 (1895).

1539. ——. Emu Vale, 16 miles (by rail) E. of Warwick (Killarney Br. line). *Co.* Aubigny; *Dist.* Darling Downs. *Ref.* O.R.

1540. ——. Oontoo, 160 miles W.byN. of Thargomindah. *Co.* Cooper; *Dist.* Gregory South. *Ref.* G.S.M.

Cinnabar. *Compo.* Sulphide of mercury. *Colour*, usually cochineal-red. *Streak*, scarlet. *H.* = 2-2·5. *Sp.gr.* 8·9. *See map*, Pls, 5, 9. *Contents* (*max.*), Mercury 86 per cent. *Note.*—The occurrences of mercury are not common. The Kilkivan localities mentioned below have been prospected to some extent, and while the quantities of mercury in the deposits are rather low, there still remains the probability of mining operations being successful at some future time owing to the extensive character of the deposits.

——. Uses. *See* Note under Mercury.

1541. ——. As a small isolated pocket (about 5 tons) of high quality. *Assoc.with* Copper Pyrites, in lode in granite. *Loc.* On surface between Elizabeth and St. George's Shaft, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* B.D. [Found in 1872 by Captain Osborne.]

1541A. Cinnabar. Launcelot Copper Mine, Newellton, 9 miles S.W. of Herberton. *Co.* Cardwell; *Dist.* **Cook.**

1542. ——. Lady Jane Mine, Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

1543. ——. Dargalong, 7 miles S. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

1544. ——. *Assoc.with* Copper Pyrites, Bornite, Redruthite, Malachite, Azurite, Hematite, Limonite, and Jasper, in quartz and calcite. *Loc.* St. George Copper and Coal Mines, Little R., 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mosman; *Dist.* Cook. *Ref.* G.S.Q. Pub. 222, pp. 21-32 (1910).

1545. —— fragments, in alluvial deposits. Granite Cr., on Percy R., 5 miles N.N.E. of Gilberton, 40 miles S.S.E. of Charleston, Etheridge Goldfield. *Co.* Percy; *Dist.* Cook. *Ref.* B.D.

1546. ——. In quartz lode. *Loc.* Half-way between the O.K. Mines and the Mitchell R. Gold and Antimony Mines, and about 40 miles N. of Mungana Rail. Stn. (Chillagoe line). *Co.* Wrotham; *Dist.* Cook. *Ref.* G.S.M.

1547. ——. Black Spring Cr., nr. Nebo, 50 miles S.W. of Mackay. *Co.* Wodehouse; *Dist.* **Leichhardt.** *Ref.* A.R.D.M., 1896, pp. 14 and 110.

1548. ——. Pors. 13 and 22, Monsildale, 35 miles N.byW. of Esk Rail. Stn., 102 miles (by rail and road) N.N.W. of Brisbane. *Co.* Canning; *Dist.* **Moreton.**

1549. ——. *Assoc.with* Limestone. *Loc.* Kilkivan, 48 miles (by rail) W. of Gympie (North Coast line). *Co.* Lennox; *Dist.* **Wide Bay.**

1550. ——. In small leaders. Bloodworth Reef, Sel. 2447, 5 miles W. of Kilkivan, 53 miles (by rail and road) W. of Gympie (North Coast line). *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 79, p. 2 (1892).

1551. ——. In calcite. Central Lode, Sel. 2447 (*ante*). *Ref.* G.S.M.

1552. ——. *Assoc.with* Copper Carbonate, Calcite, and Quartz, in granitic dyke. *Loc.* Commotion Lode, Sel. 2447 (*ante*). *Ref.* G.S.Q. Pub. 79, p. 2 (1892).

1553. ——. In alluvial deposits, in granite country. *Loc.* In flat below Commotion Lode, Sel. 2447 (*ante*). *Ref.* G.S.Q. Pub. 79, p. 2 (1892).

1554. ——. Godfrey Lode, Sel. 2447 (*ante*). *Ref.* G.S.M.

1555. ——. Mactaggart and Party's Claim, Sel. 2447 (*ante*). *Ref.* G.S.Q. Pubs. 79, pp. 1, 2 (1892), and 125, p. 27 (1897).

1556. ——. New Reef, Sel. 2447 (*ante*). *Ref.* G.S.M.

1557. ——. Messenger's Sel., 6½ miles W.byS. of Kilkivan, 55 miles (by rail and road) W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 28, p. 8 (1886).

1558. ——. *Assoc.with* Calcite, in quartz. *Loc.* Prospecting Lode, 1 mile E. of Messenger's Sel., 6½ miles W.S.W. of Kilkivan (*ante*). *Ref.* G.S.Q. Pub. 28, p. 8 (1886).

1559. ——. In quartz and calcite. Queensland Lode, 1½ mile N.N.E. of Messenger's Sel., 6½ miles W.byS. of Kilkivan (*ante*). *Ref.* G.S.Q. Pub. 28, p. 8 (1886).

1560. ——. In calcite lode and in alluvial deposits. *Loc.* Wolf Claim, E. side of Wide Bay Cr., 6 miles S.S.W. of Kilkivan (*ante*). *Ref.* G.S.Q. Pub. 28, p 8 (1886).

1561. ——. 2 miles E.N.E. of Prospecting Lode, 5½ miles W.S.W. of Kilkivan (*ante*).

1562. ——. In calcite lode. King Bombi Cr., 6½ miles W.S.W. of Kilkivan (*ante*). *Ref.* G.S.Q. Pub. 28, p. 8 (1886).

1563. ——. In quartz lodes. Between the heads of Wide Bay Cr. and Kilkivan, 8 miles S. of Kilkivan, 56 miles (by rail and road) W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Average Yield:* Antimony = 3·8 per cent. *Ref.* G.S.Q. Pub. 28, p. 8 (1886).

1564. —— (?). *Assoc.with* Gold, in alluvial deposits. *Loc.* Duan (Normanby) Is., 262 miles E. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 32 (1892).

1565. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Ferguson (Moratau) Is., 231 miles E. of Port Moresby, Brit. New Guinea. *Ref.* G.S.M.

1566. —— Merani, Cloudy Bay, 120 miles E.S.E. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 85, p. 32 (1892).

City of Dunedin Reef, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3733.

—— Glasgow Reef, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3725.

—— London Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3532; Iron Pyrites, 4961A.

—— Pompeii Tin Mine, Emu Cr., 12 miles S.E.byE. of Petford Rail. Stn. (Chillagoe line). *Min.Ref.* Cassiterite, *see* 930.

—— Sydney Reef, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3732.

Clackland Bore. *See under* Artesian Bores. No. 255.

Claim, 1½ mile N.W. of Koorboora. *Min.Ref.* Native Bismuth, *see* 340.

Clairview, 12 miles N. of St. Lawrence. *Lat.*, 22° 11′ S.; *Long.*, 149° 33′ E. *Min.Ref.* Azurite, *see* 251A; Copper (native), 2011; Cuprite, 2478; Malachite, 6368.

Clan Ronald Mine, Eureka Cr., nr. Stannary Hills. *Min.Ref.* Azurite, *see* 189; Cassiterite, 845; Malachite, 6218; Wolfram, 7943.

Clanricarde Mines, Mt. Morgan Goldfield. *Min.Ref.* Copper Pyrites, *see* 2309; Gold, 4361; Iron Pyrites, 5416.

GEOLOGICAL NOTE: The country about the mines is made up of greywacke, slate, diorite, and sandstone. The greywacke and slate are of Gympie Formation, the diorite being intrusive. The sandstone forms a covering in places to the Gympie Formation, and belongs to the Stanwell (Walloon) Series. Gold-bearing reefs a few inches thick occur in the sedimentary rocks near the diorite. *See* G.S.Q. Pub. No. 132 for notes. *See also* Supplementary Report List, No. 53.

—— Valley Artesian Bore. *See under* Artesian Bores. No. 332.

Clare's Open Cut (Gt. Eastern Tin Mine), Sundown Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1030; Mispickel, 6730; Wolfram, 8005.

—— Reef, Talgai Goldfield. *Min.Ref.* Gold, *see* 3850; Iron Pyrites, 5121; Limonite, 5856.

Clark River. Rises in Main Range, 160 miles W.byS. of Townsville, flows E.byE. into Burdekin R. 75 miles W.byN. of Townsville. Length, about 100 miles. *Min.Ref.* Cassiterite, *see* 1167.

Clarke (A. W.). Was appointed mineralogical lecturer about the end of 1885. Commenced duties on April 1st, 1886. First annual report in A.R.D.M., 1886; resigned on 31st July, 1888.

—— —— and **Jack** (Dr. R. L.)—

GEOLOGICAL SURVEY PUBLICATION: 55. On Geological Specimens from New Guinea (1889).

—— Co.; Kennedy North Dist. *See map*, Pl. 16.

—— and Joss's Claim, Terraces, Russell Goldfield. *Min.Ref.* Gold (alluvial), *see* 3229; Platinum, 7072.

—— Bore. *See under* Artesian Bores. No. 348.

Clarke (Rev. W. B.). In his official letter of 15th Oct., 1853, reference is made to Condamine River and Darling Downs and their marsupial fossil remains. Descriptions are also given of the rocks of the Upper Condamine, the auriferous gravels of Lord John's Swamp, the Pikedale Goldfield, and the coal measures about the Condamine River between Toowoomba and Warwick. Published in Parl. Papers, N.S. Wales, 1853.

Clarke's Brilliant Worcester and Victory Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2877; Gold, 3895; Iron Pyrites, 5158.

Clarke's Lake Bore. *See under* Artesian Bores. No. 211.

Claude Co.; Leichhardt Dist. *See map*, Pl. 10.

Claverton Bores. *See under* Artesian Bores. No. 211.

Clay. A general term for a group of soft, unctuous non-metallic minerals of various colours, and having silicate of alumina as their principal chemical constituent

GEOLOGICAL NOTE: There are many localities in the vicinity of Brisbane where clays suitable for almost all purposes exist, and where brickworks have been in operation for many years. The Palæozoic and Mesozoic shales have been found very suitable for making ordinary bricks, the latter also being well adapted for the manufacture of firebricks and earthenware. Pottery clays are to be found at Kingston and Dinmore, deposits at both these places yielding what is considered to be first-class pottery clays.

Large-bedded Trias Jura deposits of fireclay are being worked near Mt. Morgan, and at other places on the Ranges in the vicinity, the Mt. Morgan Gold Mining Co. using the clay in the manufacture of crucibles and firebricks. At Wycarbah, on the Central Railway line, there are enormous deposits of fireclay, in the form of an acidic tuff, derived from Mt. Hay, an extinct volcano, and extending over the surrounding country for many square miles. *See Min.Ref.* under Kaolin and fireclay.

1567. —— (deposits). Nr. mouth of Flinders R., 26 miles E. of Normanton. *Co.* Boundary of Carpentaria and Norman; *Dist.* **Burke.** *Ref.* B.D.

1568. ——. Railway Cutting, nr. Mt. Perry, 67 miles (by rail and road) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Analysis:* Silica = 75 per cent. *Ref.* G.S.Q Pub. 21, p. 12 (1885).

1569. ——. *Assoc.with* Cuprite, Malachite, Galena, Cerussite, and Ironstone. *Loc.* Girofla Mine, Opera Cr., Mungana Rail. Stn. (Chillagoe line). *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 2 (1891).

1570. —— (ferruginous) Brush Cr., nr. Texas, 50 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** (Used as a fireclay at the Silver Spur Smelting Works.) *Analysis: See* Table under Clay.

1571. ——. *Assoc.with* Pyrolusite. *Loc.* Leyburn, 28 miles W.byN. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

1572. ——. As a deposit. Campbell's Gully, at Warwick. *Co.* Merivale (*ante*). *Ref.* L.B. 2, p. 243 (1889).

1573. ——. Nebo Road Brickworks, Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 53, p. 2 (1889).

1574. ——. In Sel. 1477A, Par. of Abingdon, nr. Mirani Rail. Stn., 22 miles W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 53, p. 9 (1889).

1575. ——. *Assoc.with* Galena, Minium, Cerussite, Copper Pyrites, Iron Pyrites, and Zinc-Blende, in lode. *Loc.* General Gordon Mine, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 57, p. 6 (1889).

1576. ——. *Assoc.with* with Galena, Cerussite, and Minium, in lode, in slate. *Loc.* New Year's Gift Mine, Two-mile Cr., Sellheim R., Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

1577. ——. *Assoc.with* Gold, Silver, Lead, and Bismuth. *Loc.* Mt. Langan, nr. Blackbutt, 32 miles N.W. of Esk Rail. Stn., 71 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* A.R., p. 69 (1906).

1578. ——. Kelly's Balmoral Clay Pit, Bulimba Cr., Murarrie, 7 miles E.byN. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Analysis: See* Table. *Ref.* A.R. (1907), p. 124.

1579. —— (grey, very fusible), Fusible Sandstone. Kelly's Balmoral Clay Pit, Bulimba Cr. (*ante*). *Analysis: See* Table. *Ref.* A.R. (1907), p. 120.

NOTE: A monosilicate, easily fusible, and with more than enough alkali to flux all the silica. Melting point further reduced by the formation of double silicate.

1580. ——. Ebbw Vale Colliery, Bundamba Coal Area, Dinmore, 21 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 143, p. 2 (1899).

Analyses: See Table *under* Clay. No. 1. Mixed—3 ft. bottom and 2 ft. top in 5-ft. seam. No. 2. Bottom seam—below water.

1581. —— (ferruginous). Oxley, 8 miles (by rail) S.W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* O.R.

1581A. ——. Nundah Colliery. 6 to 10 ft. in thickness above gravel bed. Kedron Brook, near Nundah Railway Station. *Ref.* B.D. *Analysis: See* Table *under* Clay.

1581B.——. Nundah Colliery, 3 ft. thick below coal seam. *Analysis: See* Table *under* Clay.

1581C.——. Nundah Colliery, 12 ft. thick, below 3-ft. bed. *Analysis: See* Table *under* Clay.

1582. ——. Broadwater Park, 3 miles N. of Southport, 53 miles (by rail and road) S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Analysis: See* Table. *Ref.* A.R., p. 130 (1908).

1583. ——. Mt. Morgan, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Analysis: See* Table. *Ref.* A.R., p. 125 (1907).

Clay Analyses.

(See Further References under Mineral Index Number.)

Locality	Min. Index No	H_2O	SiO_2	Al_2O_3	Fe_2O_3	CaO	MgO	Na_2O	K_2O
Boonah ..	5696A	12·6	61·35	20·64	2·0	nil	nil	trace	3·45
Dinmore ...	5697	6·10	68·45	21·70	1·53	...	1·08	1·03	
Kingston ...	5698	8·74	60·48	23·78	1·04	0·30	0·61	2·04	3·15
Wellington Pt.	5698A	15·2	43·10	34·0	5·5	nil	...	...	...
Wycarbah ...	5701	5·46	65·52	19·19	1·89	3·58		0·42	
,, ...	,,	2·90	76·25	15·25	trace	...		5·60	
,, ..	,,	5·42	72·70	16·62	trace	...		7·25	
,, ...	,,	6·00	78·05	12·70	trace	...		3·25	
Mondura ...	2651B	11·01	74·75	7·17	1·92	...	4·76	...	...
Texas ..	1570	...	67·5	15·92	7·76	0·73	8·08		
Murarrie (1)	1578	7·72	65·44	25·02	trace	nil	0·75	1·08	
,, (2)	1579	11·5	56·8	32·9	6·1	nil	1·1	2·8	
Ebbw Vale (1)	1580	6·1	68·45	21·70	1·53	nil	1·08	1·03	
,, ,, (2)	,,	11·1	60·85	26·75	trace	nil	0·43	0·58	
Broadw't'r Pk.	1582	7·6	60·70	26·82		nil	1·44	trace	3·25
Mt. Morgan	1583	7·6	65·28	25·84	trace	nil	0·79	0·61	
Nundah (1) ...	1581A	11·7	57·1	28·1	1·5	nil	trace	0·8	
,, (2) ...	1581B	9·9	65·5	23·1	0·5	nil	trace	0·8	
,, (3) ...	1581C	8·9	65·9	22·4	0·4	nil	trace	0·3	

No fire tests have been made of these clays.

Clay Ironstone. *Compo.* A mixture of carbonate of iron with sand or clay (*var.* of Siderite) or of oxide of iron with sand or clay (*var.* of Hematite and Limonite).

1584. ——. In the coal measures. Scrubby Mt., 5 miles S.S.E. of Pittsworth Rail. Stn. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 194, p. 64 (1904).

1585. —— (fossiliferous). On road N. of Texas, 50 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** *Ref.* L.C.B.

1586. ——. In the coal measures. Yandilla Road, 21 miles E.S.E. of Pittsworth. *Co.* Derby; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 194, p. 64 (1904).

1587. ——. 14 miles up Cockatoo Cr., Bowen R., 65 miles S.byW. of Bowen. *Co.* Drake; *Dist.* **Kennedy South.**

1588. ——. Ipswich Coal and Coke Coy's. Mine, Chuwar, Bundamba Cr., North Ipswich, 31 miles W.S.W. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* G.S.Q. Pubs. 194, p. 56 (1904), and 235, pp. 2-6 (1911).

1589. ——. Slack's Cr., 1½ miles E. of Loganlea Rail. Stn. (South Coast line), 2½ miles S.E. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 194, p. 56 (1904).

1590. ——. Teviot Brook, ¾-mile N. of Dugandán Bridge, 2½ miles E.N.E. of Boonah, Par. of Dugandan. *Co.* Stanley (*ante*). *Analysis:* Iron, 45·36 per cent.; Silica, 12·40 per cent.; Phosphorous, 0·23 per cent.; Sulphur, *nil*; Carbon-dioxide, 4·40 per cent. *Ref.* G.S.Q. Pub. 194, p. 57 (1904).

1591. ——, nr. Upper Kholo Bridge, Brisbane R., 3 miles N. of Ipswich. *Co.* Stanley (*ante*). *Ref.* G.S.M.

1592. ——. Wallace Cr. Crossing, on Coochin Coochin Road, 3 miles S. of Dugandan Rail. Stn. (Fassifern Br. line). *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 194, p. 58 (1904).

1593. Clay Ironstone. Burrum R., nr. Howard, 14 miles N.W.byN. of Maryborough. *Co.* Cook; *Dist.* **Wide Bay.** *Ref.* L.C.B.

1594. —— (fossiliferous). The Gap, 1 mile E. Gayndah, 90 miles (by rail) W. of Maryborough. *Co.* Mackenzie; *Dist.* Wide Bay. *Ref.* L.C.B.

Cleve Bore. *See under* Artesian Bores. No. 318.

Cleopatra Silver Mine, Argentine Silverfield. *Min.Ref.* Cerussite, *see* 1264; Minium, 6609.

Clermont—

Situation: *See maps,* Pls. 10, 11, 14, and 15. Sixty-three miles (by rail) N.W.byN. of Emerald, 229 miles (by rail) W.byN. of Rockhampton. *Cos.* Dickson, Rutledge, and Belyando; *Dist.* South Kennedy; and *Co.* Clermont; *Dist.* Leichhardt. *Lat.*, 22° 45′ S. *Long.*, 147° 38′ S.

Population: (Of Goldfield), 2,331 (estimated 1910).

Railway Base for the gold, copper, and coal mining centres mentioned below.

Discoveries, Etc.: Copper was discovered at Peak Downs (Clermont) by John Mulholland in 1861. Copperfield was opened up in Sept., 1863, and the first copper smelting took place in 1866. The value of copper produced up to the year 1877 (when mine was sold for £3,000) was £1,280,000, the dividends amounting to £300,000.

Gold Discoveries: First discovery in Peak Downs in 1861. First "rush," 1862. McDonald's Flat Reefs discovered, 1866, and the first crushing there was in the Iron Duke Battery, erected by Hon. W. O. Hodgkinson, in 1879. Expedition Rush, 1863. Exodus of Chinamen to Palmer G. Field, 1873. Long Gully Lead discovered, Sept., 1863. Blanket Flat Lead discovered, Oct., 1863. Hurley Gold Lead discovered, April, 1864. Eastern River Lead discovered, Oct., 1864. McMaster's Lead discovered, Dec., 1864. The Springs Lead discovered, 1865. Miclare Diggings, discovered, 1873. Black Ridge (Gowrie Cr.) discovered in 1892. ...

Coal first discovered in well ½-mile N. of Blair Athol Coal Shaft in 1864, and the Blair Athol Colliery was opened in August, 1892. Historical Notes in G.S.Q.P. No. 148.

Rainfall: Yearly average between 1902 and 1907, 24·10 inches, and 49 wet days.

Proclamation of Goldfield: First gazetted, 11th August, 1863; last alteration, 12th May, 1887, as follows:—Commencing on the north-west corner of Gogg's Mineral Selection No. 11, and bounded on the west by a line bearing north about two miles and a-quarter to Sandy Creek; on the north by Sandy Creek easterly about four miles; on the east by a line bearing south about three miles and a-half; and on the south by a line bearing west four miles to the point of commencement.

Area of Goldfield: 1,068,160 acres (1,689 square miles).

Leases: Gold-mining Leases and Applications, in force 1912, 5; area, 96 acres. Mineral Leases and Applications, in force 1912, 23; area, 5,125 acres. Miners' Homesteads and Applications, in force 1912, 82; area, 974 acres.

Principal Mining Centres—

Gold—The Springs, Black Ridge, McMaster's, Miclare, Venus, Hurley's, Apsley, Seven Hills, Wild Cat, Copperfield, McDonald's Flat, Fiddler's Cr., Leo's Flat, Expedition Leads, Oakey Cr., Sandy Cr., Deep Cr., Flyspeck, etc., *which see.*

Copper—Copperfield (Peak Downs Mine).

Coal—Blair Athol Coalfield, comprising collieries of Blair Athol, Imbell, Eldorado, Hope, and Newcastle, *which see.*

Mineral Statistics:

Gold, *see tables,* Pls. 36, 46, 46a, *and diagram,* Pl. 47.
Copper, ,, ,, 39, 46, 46a.
Coal, ,, ,, 43, 46, 46a.

Mineral References: **Gold** (alluvial), 3277-3291, 3297-3359, (nugget) 3441a, 3441b, 3441c, (reef) 4148a-4166; **Copper** (Atacamite) 137, (Azurite) 234, (Copper Carbonate) 1949, (Copper Oxide) 2049, (Copper Pyrites) 2269, (Cuprite) 2469, (Tenorite) 7735, (Tile Ore) 2568; Manganese (Dioxide), 6448, (Psilomelane) 7091, 7092; Iron (Hematite) 4761-4766, Iron Pyrites) 5321-5326, (Ironstone) 5589, 5590, 5594-5596, (Limonite) 5889-5891, (Marcasite) 6511-6515, (Mispickel) 6770, (Siderite) 7415, 7416; Limestone, 660, 739; **Coal,** 1660-1664, 1665-1676; Alunogen, 5; Analcine, 10; Beryl, 295; Chabazite, 1313; Dolomite, 2588, 2589; Epsomite, 2617; Fire Clay, 2650a; Halloysite, 4661; Jasper, 5644; Magnesite, 5948-5950; Natrolite, 6899; Selenite, 4645; Talc, 1471; Turgite, 7899.

Clermont—*continued:*

Geological Note: The rocks about Clermont comprise slate, schists, and quartzites of indefinite age, fossiliferous limestones (Middle Devonian), and coal measures (Clermont Series) belonging to the Permo-Carboniferous System, on all of which have been formed numerous auriferous alluvial deposits. The schists, etc., contain gold-bearing reefs, and in the limestones there are numerous fossil coral remains, while the coal measures contain good coal seams. The alluvial deposits embrace a large number of gold-bearing "leads," and have yielded many thousands of ounces of gold. They may be considered to have been the richest and most extensive alluvial gold deposits in Queensland. *See* G.S.Q. Pub. Nos. 148, 176, 201 for details.

Geological Publications: Reports—Nos. 27 (1886), 103 (1894), 148 (1900), 176 (1902), 201 (1906). *See* "Geol. Surv. Pub. List" for titles and reports. *See also* List of Maps *under* Department of Mines Publications. *Also see* Supplementary Report List, Nos. 16, 48, 64, 92, 102.

Warden: Stationed at Clermont. Inspector of Mines: Stationed at Rockhampton.

Reports: Inspector's and Warden's monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Crushing Mills: Four Batteries (47 stamps). Charges, 10s. 6d. to £1 per ton.

General Information: Consult *Pugh's Almanac, Queensland Post Office Directory, Post and Telegraph Guide.* Newspaper, *Peak Downs Telegraph.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Clermont Coalfield—

Situation: Thirteen miles N.W. of Clermont, *which see.*

Collieries: Blair Athol, Imbell, Eldorado, Hope, Newcastle, Bastet's, Mercer's. These shafts are now embraced in the Blair Athol, Blair Athol Extended, Bluff Blair Athol, and Newcastle Coal Mining Companies' areas.

Mineral References: *See* Coal, 1660-1676.

Statistics: *See under* Clermont.

Clermont Goldfield. *See details under* Clermont.

—— Bore *See under* Artesian Bores. No. 15.

—— Co.; Leichhardt Dist. *See map,* Pl. 10.

——, Drummond, and Douglas Crs. (in gullies between), Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3330.

—— Lagoon. *See* Water Analysis (Table of). No. 462.

Cleveland. Twenty-three miles (by rail) E. of Brisbane. *Lat.,* 27° 31′. *Long.,* 153° 21′. *Min.Ref.* Gold, *see* 4209-4212.

Geological Note: The rocks in the neighbourhood comprise ferruginous and clayey sandstones and acidic volcanic tuffs belonging to the Ipswich Formation (Trias-Jura).

Cleveland Bay. Townsville. *Min.Ref.* Calcite, *see* 502.

Geological Note: The rocks comprise granite and volcanic tuffs (Permo-Carboniferous), which are partly covered by recent alluvial deposits. *See* G.S.Q. Pub. No. 75 for map.

—— Bore. *See under* Artesian Bores. No. 212.

—— G.P. Co.'s Mine, about 12 chains S.S.W. of Cleveland. *Min.Ref.* Gold, *see* 4210.

Clifton. S. of Toowoomba. *Lat.,* 27° 55′ S.; *Long.,* 151° 58′ E.

Discovery: Coal discovered at Clifton in well in year 1876.

Mineral References: Coal, *see* 1621; Ilmenite, 4897.

—— Bores. *See under* Artesian Bores. Nos. 213, 388.

—— Colliery, 145 miles (by rail) W.S.W. of Brisbane. *Min.Ref.* Coal, *see* 1620; Lithomarge, 5710; Steatite, 7685.

Clinker Reef, Dreghorn Diggings, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4081.

Clinton Co.; Port Curtis Dist. *See map,* Pl. 2.

Clive Co.; Darling Downs Dist. *See map,* Pl. 12.

Clio Bores. *See under* Artesian Bores. Nos. 149, 284.

Clohesy Goldfield, 8 miles N.E. (?) of Mareeba. Opened about 1889-1890. Proclaimed a Prov. Goldfield in 1895.

Clonagh Bore. *See under* Artesian Bores. No. 214.

Cloncurry Bores. *See under* Artesian Bores. Nos. 76-79, 215.

Cloncurry Gold and Mineral Field—

Situation: *See maps*, Pls. 20, 21, 23. Cloncurry township is situated 480 miles (by rail) W.byS. of Townsville. *Cos.* Argylla, Allison, Beaconsfield, Brahe, Canobie, Granada, Gregory, Kamilaroi, Landsborough, Manfred, Rochedale, Saxby, Selwyn, Tewinga, Undilla, Wondoola; *Dist.* Burke; *Cos.* Buckingham, Chatsworth, Merlin, Waverly; *Dist.* Gregory North. Centre about *Lat.* 20° 40′ S.; *Long.* 140° 33′ E.

Railway Base: Cloncurry Rail. Station is the base for the Cloncurry Field, and also for the Agate Downs and Bower Bird Goldfields.

Discoveries: Gold was first discovered at Sunday Gully, Leichhardt Run, in 1867. Soon after, in the same year, it was discovered at Top Camp by Cameron and party. In 1870 gold was found at Bishop's Creek, and in 1873 at Fisher's Creek. Copper was first discovered at Cloncurry by Mr. E. Henry in 1867; at Argylla in 1867 (Henry); at Leichhardt River in 1871 (Goodfellow and party); at Mount Oxide in 1881 (Henry); and at Duck Creek in 1867 (Henry and Sheaffe).

Population: 3,152 (Census, 1911). Area: About 22,100 square miles (14,444,000 acres).

Proclamation of Field: First gazetted, 5th May, 1899; last, 9th January, 1913, as follows: Commencing at the confluence of Dismal Creek and Cloncurry River, and bounded thence on the east by that river upwards to its junction with Williams River, by that river upwards to the south-west corner of Rockcliffe No. 1 Block (tree marked broad-arrow over F.1 over M.2 over G.G.R.); thence by a line southerly to the north-west corner of Tooleybuck No. 13 Block, by the north and east boundaries of that block and the east and part of the south boundaries of Mount Merlin No. 13 Block to Mount Merlin No. 10 Block; thence by the east boundary of that block southerly to the south-east corner; thence on the south by the southern boundaries of Mount Merlin No. 10, Mount Merlin No. 1, Mount Merlin No. 4, Mount Merlin No. 5, Chatsworth No. 5, Chatsworth No. 6, Chatsworth No. 7, Northernside No. 4, Laington No. 3, Dundee No. 3, Dundee No. 4, Laington No. 9, and Wonomo No. 1 Blocks; by the south-east boundary of Rufus No. 5 Block to the southern corner; thence on the south-west by the south-west boundaries of Rufus No. 2, Oroopo No. 2, St. Ronans No. 12, and St. Ronans No. 11 Blocks; thence on the west by the western boundaries of St. Ronans No. 11, Waverley No. 1, Thule, Carlton Hills No. 2, Carlton Hills No. 4, Whitman, Rochedale No. 11, Rochedale No. 12, Leadmore No. 5, Leadmore No. 9, Prestbury No. 1, Gundaria, Lema, Calton West, Gundermaine, Burburgate, Graman, Margaret Vale No. 6, Seymour No. 2, Seymour No. 3, and Morella No. 6 Blocks; thence on the north by the northern boundaries of Morella No. 6, Morella No. 9 Excess, Morella No. 9, Morella No. 4, Morella No. 11, Myally South, Violet Downs No. 1, Leichhardt Downs No. 6, Leichhardt Downs, No. 4, Goorala, Talawanta No. 5, and Tinkerbell Blocks to Dismal Creek, and by that creek upwards to the point of commencement;—exclusive of such land as is now freehold, and also as is comprised within now existing pastoral holdings and grazing selections under lease prior to the date hereof, except such pastoral holdings and grazing selections as are at present within the boundaries of—The Cloncurry Mineral Field (proclaimed 6th September, 1906); The Cloncurry Goldfield (proclaimed 29th November, 1889); The Bower Bird Gold and Mineral Field (proclaimed 16th September, 1902); The Duchess Gold and Mineral Field (proclaimed 20th July, 1912); The Mount Oxide Gold and Mineral Field (proclaimed 14th November, 1912); The Agate Downs Gold and Mineral Field (proclaimed 2nd December, 1891).

Leases: Gold-mining Leases in force, 10; area, 79 acres. Mineral Leases, 502; area, 6,973 acres. Miners' Homesteads, 654; area, 1,858 acres (1912).

Principal Mining Centres: Argylla, Bell's Camp, Bishop's Cr., Burke R., Cameron R., Chinaman Cr., Cloncurry, Coolullah, Corella R., Donaldson, Duck Cr., Dugald R., Elder Cr., Florence R., Glenroy, Gunpowder Cr., Hampden, Leichhardt R., Maggie's Cr., Malbon R., Martin's Cr., Morris Cr., Mt. Oxide, Palm-tree Cr., Prospector's Cr., Pumpkin Gully, Slaty Cr., Soldier's Cap, Top Camp, Two-mile Cr., and Will's R., *which see.*

Mineral Statistics:

Gold, *included in* Other Goldfields. *See* Pls. 36, 46-46a, 47.

Copper, *see tables,* Pls. 39, 46, 46a.

Silver, ,, Pls. 37, 46, 46a.

Cloncurry Gold and Mineral Field—*continued:*

Gold Values: *See under* Gold.

Statistical Note: The Cloncurry Mineral Field has produced 16.47 per cent. of the State's total production of Copper to the end of 1912.

Mineral References: **Gold** (alluvial), 3171, 3172, 3174-3182, 3184-3188, (nugget) 3435, 3436, (reef) 3450B, 3451-3457, 3463-3475; *Silver*, 7424, 7424A; *Lead* (Massicot) 6516, (Minium) 6575; **Copper** (Atacamite) 126, 127, 132, 133, (Azurite) 151-156, 159-171, 205-208, (Bornite) 413-415, (Chalcanthite) 1327, (Chrysocolla) 1490-1516, 1522-1524, (Copper Carbonate) 1867-1877, 1907-1909, (Copper, native) 1971-1982, 1984-1988, 1996-1998, (Copper Ore) 2016-2019B, (Copper Pyrites) 2060-2066, 2069-2101, 2103-2120, 2199-2209, (Covelline) 2375, 2376, (Cuprite) 2377-2416, 2447-2454, (Dioptase) 2581, 2582A, (Malachite) 6069-6088, 6091-6189, (Redruthite) 7201-7253, 7255-7273, 7285-7296, (Tenorite) 7707-7712, 7725-7727, (Tetrahedrite) 7750-7758, 7769, (Tile Ore) 2492-2543, 2552-2561; *Tin* (Cassiterite), 771; *Bismuth* (Bismite) 317, (Bismuth) 323, 324, (Bismutite) 377; *Antimony* 69, (Chalcostibite) 1408, (Stibnite) 7604; Manganese (dioxide), 6386-6392, (Manganite) 6497, (Psilomelane) 7079, 7089, (Rhodochrosite) 7313, (Wad) 7108, 7110; *Iron* (Gothite) 4562, 4563, (Hematite) 4666-4673, 4678, 4681-4689, 4694, 4695, (Ilmenite) 4880, (Iron Pyrites) 4918-4921, 4923-4932, 4969, 4970, 5131-5135, (Ironstone) 5480-5492, 5505-5507, 5545, (Lievrite) 5735, (Limonite) 5739-5798A, 5803-5826, 5860-5871, (Magnetite) 5965-5967, 5969, 5970, (Siderite) 7400-7402, (Turgite) 7881-7885; Graphite, 4569A, 4570; Limestone, 615-621, 740, 741. *Other Minerals:* Actinolite, 4850-4853; Asbestos, 105; Barytes, 264A; Biotite, 301; Calcite, 447, 450, 452-462, 468-470, 492-495; Chalcedony, 1337, 1338, 1343; Chlorite, 1421-1424; Epidote, 2591, 2591A; Epsomite, 2614; Ferro-Calcite, 572-575; 153 and 215 for details and map, the latter publication giving a mass of 5943; Muscovite, 6883, 6884; Selenite, 4642; Staurolite, 7599; Tourmaline, 7811-7816.

Geological Note: The rocks of the district comprise slates, schists, quartzites, gneiss, granite, porphyry, etc., and are considered to belong to the Silurian system. The copper deposits of the Cloncurry fields are formed along bedding planes and not in fissures. *See* G.S.Q. Pubs. Nos. 153 and 215 for details and map, the latter publication giving a mass of information about the mines.

Geological Publications: Reports—Nos. 10, 48, 104, 136, 153, 190, and 215. *Maps*, No. 213. *See under* Geol. Surv. Pub. List for title. *Also under* Government Mining Jour., Report No. 56. *See also* List of Maps *under* Department of Mines Publications. *See also* Supplementary Report List, No. 58.

Warden and Inspector of Mines: Both stationed at Cloncurry.

Reports: Inspector's and Warden's monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Smelting Works: Duck Creek, Great Australian Mine, Hampden, The Gorge, and Mt. Elliott. *See under* Smelting Works in Queensland.

Cloncurry Goldfield. *See under* Cloncurry Gold and Mineral Field.

—— Hills (on Mackinlay side of). About 20 miles S.E. of Cloncurry. *Min.Ref.* Copper Ore, *see* 2016; Cuprite, 2393; Malachite, 6103.

—— River. *Min.Ref.* Gold (alluvial), *see* 3175, 3177-3182.

Clooracorn P.P.A. (147). Mt. Flora G. and M. Field. *Min.Ref.* Malachite, *see* 6339D; Redruthite, 7299A.

Cloudy Bay. Brit. New Guinea. *Min.Ref.* Cinnabar, *see* 1566.

—— Cr., Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1152.

Clover Hills Bore. *See under* Artesian Bores. No. 155.

Cloyna and Murgon's Bore. *See under* Artesian Bores. No. 16.

Clumber, nr. Cunningham's Gap, S.W. of Boonah Rail. Stn. *Min.Ref.* Coal, *see* 1722A.

Clunn's Falls, Annan Tin Field. *Min.Ref.* Cassiterite, *see* 779; Tourmaline, 7827.

Clutha Run Bores. *See under* Artesian Bores. Nos. 216, 217.

Clyde Colliery. Burrum Coalfield. *Min.Ref.* Coal, *see* 1806

—— Tin Claim. Herberton. *Min.Ref.* Cassiterite, *see* 1072.

Coal. *Sp.gr.* = 1·2-1·8. *Colour,* black, brown. *Varieties* and *Sub-varieties*—Lignite, Port Clinton. etc. Bituminous Coal—Bluff, Burrum. Clermont, Darling Downs, Ipswich, Mackenzie, Walloon, etc. Semi-anthracite—Dawson River. Anthracite (impure)—Mackay, Tiaro.

GEOLOGICAL NOTES: Coal is found in Queensland in rocks belonging to the Cretaceous, Trias-Jura, and Permo-Carboniferous Systems. Cretaceous lignite deposits occur at Waterpark Creek, near Port Clinton, to the north of Rockhampton, and other coal seams of the same age are known in Western Queensland. The Burrum Field is also now recognised to be a Cretaceous formation, previously being considered to be Trias-Jura. Trias-Jura coal seams occur in many places between Brisbane and the southern border, and to the west of Brisbane, and also about Warwick, Beaudesert, Darling Downs, and Ipswich. Coal deposits at Callide and Styx River also belong to this System. Permo-Carboniferous Coal Measures extend over an enormous area in Central Queensland, and include the coalfield at Clermont, and the large tract of country reaching northerly from the southern watersheds of the Dawson and Comet Rivers across the Central Railway about the Bluff, and up the Mackenzie and Isaac Rivers as far as the Bowen River to the west of Mackay, a distance of about 400 miles. In Northern Queensland, the Mount Mulligan field, which is a small Permo-Carboniferous area surrounded by older rocks, gives promise of becoming a field of importance, being close to the Chillagoe railway line, and not far either from the coast or from the Chillagoe Smelting Works. Other Permo-Carboniferous fields near Cooktown, and at Little River, further west, and along the coast further north, may be looked upon to produce coal in the future.

AREA OF COAL MEASURES AND COALFIELDS:

Cretaceous Coal Measures. There are 20,000 square miles of country which may be considered to be coal measures belonging to this System, of which 2,000 square miles may be classed as coalfields, containing seams of coal whose value has not yet been determined.

Trias-Jura Coal Measures. This series contains about 23,000 square miles, and is mostly confined to the south-eastern quadrant of the State. 2,000 square miles have been proved to be coal-bearing.

Permo-Carboniferous Coal Measures. The area of this formation, situated to the north and south of the Central Railway line west of Rockhampton, is 30,000 square miles in extent, in which there is 16,000 square miles of country containing good coal seams of varying thicknesses and qualities.

COAL RESOURCES: (For details see separate heading under name of field).

A general review of the State's coal resources shows that there are 22 coalfields, namely:—Beaudesert, Burrum, Bowen River, Callide, Chinchilla, Clermont, Cooktown, Dalby, Dawson River, Hughenden, Ipswich, Little River, Mackenzie River, Central Railway line, Mt. Mulligan, Nebo, Nundah-Eagle Junction, Styx River, Tiaro, Toowoomba, Warwick, and Waterpark Creek. In addition, there is a host of localitites where coal seams are known, but whose thickness, extent, and quality have not been determined, references to which are made further on.

In the above 22 localities there are undoubtedly great areas of productive coalfields, and 120 coal seams have been recorded, each having a thickness of *not less than one foot,* and of fair quality. Hundreds of other seams also exist whose thickness is either less than one foot or has not been determined, and whose quality, where tested, shows they are of no commercial value.

The most conspicuous fields so far as future supplies of coal are concerned, is the Dawson-Mackenzie Area, which has an "actual" reserve of 122,000,000 tons of coal, "probable" reserves being 621,000,000 tons, "possible" reserves being 6,000,000,000 tons. Next in order comes the Clermont Area, with 200,000,000 tons "actual," 300,000,000 tons "probable," and 1,000,000,000 tons "possible."

On the above condition—"not less than one foot in thickness," and also disregarding the question of what is "available," which depends so much on local conditions—the State's coal supply is as follows:—"Actual" reserve, 400,000,000 tons; "probable" reserve, 2,000,000,000 tons; "possible" reserve, 13,000,000,000 tons.

Coal—*continued:*

UNPROSPECTED COAL MEASURES:

Brisbane has Mesozoic Coal Measures in its vicinity which have not yet been thoroughly prospected, the principal localities where the measures are exposed being Caloundra, Bribie, Humpy Bong, Sandgate, Nundah, Queensport, Tingalpa, Logan, Southport, Stradbroke Island, and Moreton Island. The area is 60 miles long, and about 12 miles wide, and coal has been found on almost every portion of it. Ipswich also has large areas not yet prospected, and the same may be said of Beaudesert and the Darling Downs.

Maryborough is the centre of a large coal area, and operations are now in progress prospecting lands adjacent to the proposed deep-water port at Urangan Point.

Gladstone is about 50 miles from the little-prospected Callide Creek Coalfield. Much has to be done on this field before its resources are fully known, and the area might easily be extended by prospecting.

Rockhampton has coalfields on the west and north. Those on the west include the Dawson-Mackenzie Area and Stanwell, the latter being of doubtful value, but within 20 miles of the city. To the north is the Styx field, which will soon be worked now that railway communication is being established.

Mackay, Bowen, Townsville, Cairns, and Cooktown each have inland coalfields, and local developments are reported from time to time in areas known to carry coal seams, but regular outputs have not yet taken place.

Western Queensland coalfields were defined when boring operations for water were being conducted about Winton and Hughenden, and with the necessity of supplying coal for the railways being built in the Western districts, some developments will be expected to take place in this part of the State.

Cape York Peninsula. Coal has been reported to occur at the Pascoe River and at Lloyd Bay, but nothing definite is known about it.

QUALITIES OF THE COALS. (*See also* Tables of Approximate Analyses.)

Hydrous Coals occur at Callide, Hughenden, and Waterpark Creek, those at the latter place being a true brown coal containing over 10 per cent. of moisture. The Dawson, Mackenzie, and Little River coals are very *low in moisture,* the Dawson having a mean of 1·3 per cent. Some of the other coals show very low percentages, being close to volcanic or other disturbances.

Gas Coals are well represented in the seams at Beaudesert, Warwick, Walloon, Dalby, and Waterpark, those conspicuous for having a small amount of volatile matter being Nebo, Dawson River, and Little River coals. Those high in *fixed carbon* include the coals of the Dawson, Mackenzie, and Little Rivers, the Dawson having a mean of 80 per cent. Other extremes are shown in the coals at Warwick, Toowoomba, and Waterpark, each of which contain about 41 per cent. The best *heating coals* are found at the Burrum, Ipswich, Styx River, and Clermont. The Mackenzie and Dawson coals, although showing the highest calorific values, have not yet proved successful, on account of their defective combustion in ordinary fire grates.

In *coke-making* the Ipswich and Burrum coals have proved their excellence for making good coke, some of the Styx coal also being adapted for this purpose.

Friability. The Styx and Ipswich coals are somewhat friable, while those at the Burrum, Clermont, Mackenzie, Dawson, Walloon, Warwick, and Toowoomba are firm.

Sulphur determinations have occasionally been determined, Cooktown showing the highest percentage (1·8), the Styx the lowest (0·2), the Ipswich coals varying between 0·4 and 1·7, other coals being between 1·1 and 1·4.

Ash percentages are lowest in the Burrum coals, which average 5 per cent., while the 66-ft. Blair Athol seam at Clermont, the 20-ft. Mammoth seam at Mackenzie River, and the 52-ft. seam at Waterpark each contain about 7 per cent., the Dawson seams containing about 9 per cent. Ipswich coals fluctuate above and below 10 per cent., the Toowoomba and Warwick coals about 15 per cent.

Coal—*continued :*

MINING OPERATIONS: Coal is being mined in a large number of collieries about Ipswich and West Moreton, and also in a few collieries at Darling Downs, Burrum near Maryborough, Blair Athol near Clermont, and the Bluff on the Central Railway. Developments are in progress, vigorously extending the area of productive coal measures about Ipswich, Burrum, Clermont, and Dawson River, while prospecting operations are being undertaken to test the value of the coal seams about Brisbane, Moreton Bay, Bowen River, Maryborough, Central Railway, and other places. Several coal shafts have been sunk on the Styx, Bowen, Little, Dawson, and Mackenzie Rivers, and Callide Creek coalfields, and from which small bulk quantities of coal have been obtained for experimental purposes, but regular outputs have not begun. A railway line to the Dawson River, now under construction, will be the means of opening up the large area of coal country existing there.

COALFIELDS AND COAL DISTRICTS (*see under* name of field for further references: important localities in **black.**).

Blackrock Creek (nr. Mackay). *See maps,* Pls. 14, 15.
Blackwater Hole Creek (*see* Hazeldean).
Blackwater (Central Railway). *See maps,* Pls. 10, 11, 33.
Beaudesert. *See maps,* Pls. 6, 7.
Bee Creek (nr. Mackay). *See maps,* Pls. 10, 11.
Bluff (Central Railway). *See maps,* Pls. 10, 11, 33.
Bowen River (nr. Mackay). *See maps,* Pls. 14, 15.
Bundamba (nr. Ipswich). *See maps,* Pls. 6, 7, 25.
Burrum (nr. Maryborough). *See maps,* Pls. 4, 5, 24.
Callide (nr. Gladstone). *See maps,* Pls. 2, 3, 34.
Clermont (Blair Athol, etc.). *See maps,* Pls. 10, 11.
Clifton (Darling Downs). *See maps,* Pls. 12, 13.
Comet River (Central Railway). *See maps,* Pls. 10, 11, 33.
Constant Cr. (Mackay Dist.).
Cooktown (Little River, Deighton River, etc.). *See maps,* Pls. 8, 9.
Dalby (Dingo Pt., Jimbour). *See maps,* Pls. 12, 13.
Darling Downs (Clifton, Kingsthorpe, Oakey). *See maps,* Pls. 12, 13.
Dawson River (Dawson and Dunstan). *See maps,* Pls. 10, 11, 33.
Forest Vale (N. of Mitchell). *See maps,* Pls. 12, 14.
Gunalda (Maryborough-Gympie Rail. line). *See maps,* Pls. 4, 5.
Gundiah (Marbyorough-Gympie Rail. line). *See maps,* Pls. 4, 5.
Hazeldean (Mackay dist.). *See maps,* Pls. 10, 11.
Howard (Burrum). *See maps,* Pls. 4, 5, 24.
Hughenden (Warreah, Flinders R., Mt. Sturgeon). *See maps,* Pls. 20, 21.
Ipswich (North). *See maps,* Pls. 6, 7, 25.
Jimbour (Darling Downs). *See maps,* Pls. 12, 13.
Jellinbah (Mackenzie River). *See maps,* Pls. 10, 11, 33.
Killarney (nr. Warwick). *See maps,* Pls. 12, 13.
Kingsthorpe. *See* Darling Downs.
Logan (nr. Brisbane). *See maps,* Pls. 6, 7.
Little River (nr. Cooktown). *See maps,* Pls. 8, 9.
Mackay (Blackrock Cr.; Walker's Cr., Bowen R.) *See maps,* Pls. 14, 15.
Mackenzie R. (Jellinbar). *See maps,* Pls. 10, 11, 33.
Mammoth (nr. Blackwater Stn. (C.R.). *See maps,* Pls. 10, 11, 33.
Maranoa. *See maps,* Pls. 12, 13.
Miva (nr. Gympie). *See maps,* Pls. 4, 5.
Mt. Bopple (nr. Netherby Rail. Stn.). *See maps,* Pls. 4, 5.
Mt. Sturgeon (Hughenden district). *See maps,* Pls. 20, 21.
Mt. Mulligan (nr. Thornborough). *See maps,* Pls. 8, 9.
Munna Cr. *See* Miva.
Nebo (Mackay district). *See* Bee Cr. and Walker's Cr.
Nundah (nr. Brisbane). *See maps,* Pls. 6, 7.
Oakey (Darling Downs). *See maps,* Pls. 12, 13.

Coal—*continued:*

Coalfields and Coal Districts—*continued:*

Port Clinton (N. of Rockhampton), *Lignite. See maps,* Pls. 2, 3.
Rosewood (W. of Ipswich). *See maps,* Pls. 6, 7.
Stanley (Central Railway). *See maps,* Pls. 10, 11.
Stanwell (nr. Rockhampton). *See maps,* Pls. 2, 3.
Stewart's Creek (nr. Townsville). *See maps,* Pls. 16, 17.
Styx River (nr. St. Lawrence). *See maps,* Pls. 2, 3.
Tannymorel (nr. Warwick). *See maps,* Pls. 12, 13.
Tiaro (*see* Gunalda, Gundiah, and Mt. Bopple).
Tingalpa (nr. Brisbane River). *See maps,* Pls. 6, 7.
Tivoli (N. of Ipswich). *See maps,* Pls. 6, 7, 25.
Tolmies (Central R. line). *See maps,* Pls. 10, 11.
Torbanlea (Burrum, nr. Maryborough). *See maps,* Pls. 4, 5, 24.
Typhinia (Central Rail. line). *See maps,* Pls. 10, 11, 33.
Walker's Creek (Mackay dist.). *See maps,* Pls. 10, 11.
Walleroo (Central Rail. line). *See maps,* Pls. 10, 11, 33.
Walloon (nr. Ipswich). *See maps,* Pls. 6, 7, 25.
Warreah (nr. Hughenden). *See maps,* Pls. 20, 21.
Yahmahnto (nr. Ipswich). *See map,* Pl. 25.

COLLIERIES—

Aberdare (Bundamba).
Aberdare Extended (Bundamba).
Abermain (North Ipswich).
Bastet's (Old) (Clermont).
Belmont = Noble Vale No. 2.
Blackheath (Bundamba).
Blair Athol (Clermont).
Blair Athol Extended (Clermont).
Blair Athol North (Clermont).
Bluff (Central Railway).
Bogside (Bundamba) (old).
Bogside No. 2.
Bonnie Dundee (Bundamba).
Borehole (Bundamba) (old).
Box Flat (Bundamba).
Braeside (Bundamba)
Burgowan (Torbanlea).
Caledonian (Walloon).
Cardiff (Bundamba)
Charley (nr. Tryphinia Rl. Stn.).
Clifton (Darling Downs).
Clyde (Q. Coll. Co.) (Howard).
Columba (Old) (Central Railway).
Coronation (Bundamba).
Dawson River Anthracite.
Denham (Bundamba).
Dinmore (Bundamba).
Donnybrook (North Ipswich).
Dudley (Q. Coll. Co.) (Howard).
Dudley (Karrabin, W. Ipswich)
Dundee (Howard).
Dunstan Syndicate (Dawson R.).
Eastwood (North Ipswich) (old).
Ebbw Vale (Bundamba) (old).
Eclipse (North Ipswich).
Eldorado (Clermont).
Enterprise. *See* Braeside.
Enterprise (Kingsthorpe).
Excelsior (Rosewood).
Fairbank (Bundamba).
Federal (Oakey, D.D.).
Fernie Creek = Bogside No. 2.
Glencoe (Rosewood).
Glenesk (Burrum).
Good Hope (Yahmahnto) [Loamside].
Goodna (Bundamba).
Gowrie (King's Siding, D. Downs).
Haighmoor (North Ipswich) (old).
Hope (Old) (Clermont).
Howard—*Includes* Burrum, Clyde, Dudley, and Dundee.
Imbell (Old) (Clermont).
Kingsthorpe (Darling Downs). *Also includes* Enterprise, Sugarloaf, and Sunrise.
Little Ipswich.
Mafeking (Bundamba).
Mammoth (Central Railway).
Mammoth Admiralty (Cent. Rail.).
Mercer's (Old) (Clermont).
Mount Mulligan (nr. Thornborough).
Newcastle (Clermont).
New Chum (Bundamba).
New Day Dawn (Bundamba).
New Eclipse (North Ipswich).
Noble Vale (Bundamba) Nos. 1 and 2.
Nundah (nr. Brisbane).
Old West Moreton (Bundamba).
Parkhead (Bundamba).
Purga (nr. Ipswich).
Queensland Collieries (Howard).
Rhondda (Bundamba).
Riverbank (Burrum).
Rosewood (Excelsior and Glencoe).
Rothwell Haigh (North Ipswich).
Speedwell (Yahmahnto) [Loamside].
Stanley (Central Railway).
Sugarloaf (Kingsthorpe, D.D.).
Sunrise (Kingsthorpe, D.D.).
Swanbank (Bundamba) (old).
Tannymorel (Warwick District).
Tanyalba (Gundiah).
Tivoli (North Ipswich).
Torbanlea (Burrum Coalfield).
Wallaroo (Central Railway).
Walloon (nr. Ipswich).
Wattle Glen = Noble Vale No. 1.
Whitwood (Bundamba).

Coal—*continued:*

Discoveries: *See under* "Discoveries," separate heading.

Ports for Coal Export: Brisbane is the port for all the output of the mines in the Ipswich district, Maryborough being the port for the Burrum field. With the building of a deep-water jetty at Urangan Point, Maryborough will become an important shipping centre for coal. Gladstone will be the port for the Callide Coalfield when railway communication is established. Rockhampton has deep-water wharves at Port Alma and Broadmount, near the mouth of the Fitzroy River, and both these ports will be the outlets for the Dawson, Mackenzie, Styx, Bluff, Clermont, and other coals when once an export trade is established. Townsville has very little prospect of a coalfield being opened up in its immediate vicinity, although possibilities exist close to the railway at Stewart's Creek, and near Hughenden, while Bowen has a field at the Bowen River awaiting development. Mackay would be an additional port for the Styx River coal, and the port for Bee Creek and St. Helen's, and Cooktown the port for the Little River field. Coal occurs further north about Lloyd Bay, but of this nothing is known, except that specimens show it to be anthracite.

Statistical Notes:

The coal production in the chief countries of the world for the year 1910 is estimated, approximately, at 1,121,536,190 long tons, to which amount the Australian States contributed 7,659,767 long tons. This is equal to 0.68 per cent. of the world's yield. The coal output of Queensland for the year 1910 is estimated at 871,166 long tons, this being a percentage of 11·37 of the Australian, and 0·07 of the world's production for that year.

The Ipswich, West Moreton, and Darling Downs Coalfields have, between the years 1860 and 1912, yielded an estimated coal output of 11,558,659 tons; the Burrum Coalfield produced, approximately, 2,197,382 tons; the Blair Athol Coalfield, 299,095 tons. The percentages of the above outputs of coal to the estimated total coal production of Queensland are as follows, viz.:—Ipswich and West Moreton (including Darling Downs), 81·66; Burrum, 15·52; and Blair Athol (Clermont), 2·12.

The coal output of the collieries in Queensland has been gradually increasing from a yield of 323,068 tons in the year 1895 to 902,166 tons in 1912. The year 1912 also happens to be the one with the most valuable output (the price per ton being greatest), the amount realised being £338,264, this being equal to 6·29 per cent. of the value of the total coal production of the State.

Queensland's total output of coal to the end of the year 1912 is estimated, approximately, at 14,154,049 tons, valued at £5,377,240, equivalent to 5·17 per cent. of the whole value of the mineral production of the State to the end of the same year, which is estimated to be £104,009,087.

For details, *see tables*, Pls. 43, 45, 46, 46a, and *diagram*, Pl. 55.

Coal Prices (Yearly Average per Ton at Pit's Mouth)—

	s.	*d.*		*s.*	*d.*		*s.*	*d.*
1900 ...	6	11	1905	5	10½	1910	7	5
1901 ...	7	0	1906	5	8½	1911	7	3
1902 ...	6	10	1907	6	6	1912	7	6
1903 ...	6	5½	1908	7	0½			
1904 ...	6	6	1909	7	1¾			

Coal Imports and Exports.—No records are kept of the quantities of coal and coke imported or exported, but records show that during the last few years between 55,000 and 65,000 tons of coal and coke have been imported annually into Queensland, principally from the Newcastle coal fields, in New South Wales. Very small quantities of coal and coke are exported from Queensland.

Coal Bibliography.—*Principal references only.*

(*See* Geol. Surv. Queensland Pub. List, Gov. Ming Jour. List, and Supplementary Reports for titles, etc.)

Ball (L. C.)—G.S.Q. Pubs. Nos. 170 (1901), 201 (1906), 222 (1910), 229 (1910), 237 (1912). Q.G.M.J., Reports. Nos. 52, 64, 66, 85. Supplementary Reports, 114, 128, 129.

Cameron (W. E.)—G.S.Q. Pubs. Nos. 147 (1889), 174 (1902), 181 (1903), 200 (1905), 204 (1906), 235 (1911). Q.G.M.J., Reports. Nos. 72, 103, 106, 112, 114. Supplementary Reports, Nos. 126, 139, 140, 150.

Coal Bibliography—*continued:*

Dunstan (B.)—G.S.Q. Pubs. Nos. 131 (1898), 148 (1900), 150 (1899), 155 (1901), 164 (1901), 190 (1904). Q.G.M.J., Reports. Nos. 39, 75, 86, 104. Supplementary Reports, Nos. 72, 100, 103, 104, 108, 112, 115, 133, 136, 137, 143, 144, 145, 146.

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Gregory (Sir A. C.)—Report on Coal in West Moreton and Darling Downs. By Auth. (1876). Report on Burrum. By Auth. (1878). Report on Dalby and Roma. By Auth. (1879).

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Hunter (R.)—Q.G.M.J., Report No. 79.

Jack (Dr. R. L.)—G.S.Q. Pubs. Nos. 4 (1878), 6 (1879), 7 (1879), 11 (1882), 39 (1887), 44 (1888), 87 (1891), 92 (1892), 106 (1895), 108 (1896). Supplementary Report, Nos. 3, 12, 26, 27, 46.

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Maitland (A. Gibb)—G.S.Q. Pubs. Nos. 70 (1891), 107 (1895), 108 (1896). Supplementary Report, No. 59.

Marks (E. O.)—G.S.Q. Pubs. Nos. 225 (1910), 235 (1911). Q.G.M.J., Reports Nos. 94, 99, 99A. Supplementary Reports, Nos. 132, 151.

Rands (W. H.)—G.S.Q. Pubs. Nos. 24 (1886), 51 (1889), 59 (1890), 64 (1890), 80 (1891), 84 (1892), 87 (1892), 91 (1893). Q.G.M.J., Report No. 2. Supplementary Reports, Nos. 33, 74, 80, 87.

Thomas (J. A.)—Q.G.M.J., Report No. 93.

For bibliography of localities *see under* names mentioned above in list of "Coalfields and Coal Districts." *See also* references under coal index numbers.

1594A. Coal streaks at 3,768 feet in Cretaceous beds. *Loc.* Canobie Artesian Bore, No. 200, about 70 miles N.byE. of Cloncurry. *Co.* Canobie; *Dist.* Burke. *Ref.* A.R.H.E. (1911).

1595. ——. New Marathon Bore (Bradbury), nr. Hughenden Rail. Stn. (Northern line). *Co.* Douglas. *Dist.* **Burke**. *Analysis: See* Coal Table, No. 245. *Ref.* L.B. 4, p. 938 (1897). [No details.]

1595A.——. Seam said to be 15 ft. thick at 550 ft. below surface in Cretaceous beds. *Loc.* Charlotte Plains (Richmond) No. 8 Bore, No. 207, about 40 miles N.N.W. of Hughenden Rail. Stn. (Northern line). *Co.* Dutton; *Dist.* Burke. *Ref.* A.R.H.E. (1911).

1596. ——. (half-inch seam). *Assoc.with* 6-in. band of carbonaceous shale, in desert sandstone. *Loc.* Bird in-the-Bush Gold Mine, Croydon Goldfield, 94 miles (by rail), S.E. of Normanton. *Co.* Surrey. *Dist.* Burke. *Ref.* B.D.

1597. —— (lignite), nr. True Blue, between Croydon and Golden Gate, 1¾ miles, N.W. by N. of Croydon Rail. Stn. *Co.* Surrey (*ante*). *Ref.* G.S.Q. Pub. 202, p. 14 (1905).

1597A.——. Streaks at 1,548 ft. in Cretaceous beds. *Loc.* Donor's Hill Artesian Bore, No. 251, about 80 miles S.byW. of Normanton. *Co.* Wondoola; *Dist.* Burke. *Ref.* A.R.H.E. (1911).

1598. ——. Left bank of Flinders R., 18 miles W.N.W. of Warreah (Coalbrook) Rail. Stn. (Gt. Northern line). *Co.* Wongalee. *Dist.* Burke. *Analysis: See* Coal Table, No. 233. *Ref.* G.S.Q. Pub. 44, p. 2 (1888).

1598A. ——. Coal Prospecting Area (53), W. side of Galah Gorge or Porcupine Cr., Mt. Sturgeon Run, 44 miles N.N.E. of Hughenden. *Co.* Wongalee (*ante*). *Ref.* Q.G.M.J., p. 638 (1909). *See* Coal Table, Nos. 244, 244A.

1599. ——. Culgowrie Grazing Farm (11v). Ironpot Cr., trib. of Boyne R., 5 miles S. of Burrandowan, 35 miles N. of Dalby. *Co.* Boondooma. *Dist.* **Burnett**. *Ref.* G.S.Q. Pubs. 103, p. 7 (1894), and 114, p. 2 (1896).

1599A.—— (as small band). *Assoc.with* sandstone, shales, and conglomerates. *Loc.* Four miles from Gayndah, nr. road to Mundubbera. *Co.* Mackenzie; *Dist.* Burnett. *Ref.* B.D.

1600. —— (bands). *Assoc.with* shale bands (total thickness 5 ft.). *Loc.* Brovinia Gold Diggings, Brovinia Cr., trib. of Cadarga Cr., Auburn R., 100 miles S.W. of Bundaberg. *Co.* Newcastle (*ante*). *Ref.* Q.G.S. Pub. 114, p. 4 (1896).

1601. —— (bituminous), Burnett Springs. *Co.* (?). *Dist.* Burnett. *Ref.* Q.M.

1601A. Coal (seam one foot thick). *Loc.* In well at Gayndah (?). *Co.* Mackenzie. *Dist.* Burnett.

1601B.——. Seam, said to be 12 feet thick, exists on Eastern Creek, between Mt. Perry and Eidsvold.

1602. ——. Christie and party's Coal Area, Deighton R., 38-mile Rail. Peg (Cooktown line). *Co.* Banks; *Dist.* **Cook.** *Analysis: See* Coal Table, No. 106. *Ref.* G.S.Q. Pubs. 106, p. 1 (1895), and 94, p. 2 (1893).

1603. ——. Christie's Coal Seam, Deighton R., 12 miles S. of Welcome Rail. Stn. (Cooktown line), 57 miles (by rail and road) W.byN. of Cooktown. *Co.* Banks (*ante*). *Analyses: See* Coal Table, Nos. 101-102B, 415, 415A. *Refs.* A.R.D.M. 1884, p. 51, A.R., 1908, pp. 145-156 (1908), Q.G.M.J., 1909, p. 185, and A.R., p. 175 (1909), and G.S.Q. Pub. 222, p. 11 (1910).

1604. ——. Endeavour R., Cooktown. *Co.* Banks (*ante*). *Ref.* Q.M.

1605. ——. Guppy's Seam, Guppy's Tableland, between Cape Bedford and India Head, 12 miles N. of Cooktown. *Co.* Banks (*ante*). *Analysis: See* Coal Table, No. 103. *Ref.* G.S.Q. Pub. 70, p. 3 (1895), and P. 222, p. 11 (1910).

1606. ——. Oakey Cr., 16 miles W.S.W. of Cooktown. *Co.* Banks (*ante*). *Ref.* G.S.Q. Pub. 6, p. 1 (1879).

1607. ——. Puckley's Cr., 37 miles W. of Cooktown. *Co.* Banks (*ante*). *Analyses: See* Coal Table, Nos. 104, 105. *Ref.* G.S.Q. Pubs. 35, p. 13 (1887), 70, p. 5 (1891), and 222, p. 11 (1910).

1608. ——. Stack's Cr., ½-mile N.W. of 37¾-mile Rail. Peg, Cooktown line. *Co.* Banks (*ante*). *Analyses: See* Coal Table, Nos. 97-100. *Ref.* G.S.Q. Pubs. 180, p. 26 (1902), and 222, p. 10 (1910).

1609. ——. Welcome Valley, 6 miles S.W. of the 31-mile Peg (Cooktown Rail.). *Co.* Banks (*ante*). *Analysis: See* Coal Table, No. 96. *Ref.* A.R., p. 156 (1908), and G.S.Q. Pub. 222, pp. 10, 11 (1910).

1610. ——. In gully nr. Tyrell's shaft, br. of Welcome Cr., 3 miles S. of 41-mile Rail. Peg (Cooktown line), 45 miles (by rail) W. of Cooktown. *Co.* Banks (*ante*). *Analysis: See* Coal Table, No. 95. *Ref.* G.S.Q. Pub. 35, p. 13 (1887), and 70, p. 5 (1891).

1610A.——. Wild Boar Coal Seam, A.C. Creek, 3½ miles S.E. of Christie's Crop, 15 miles S. of Welcome Rail. Stn. (Cooktown line). *Co.* Banks (*ante*). *Ref.* G.S.Q. Pub. 222, p. 12 (1910).

1611. ——. Yam Cr., 25 miles W. of Cooktown. *Co.* Banks (*ante*). *Ref.* G.S.Q. Pub. 6, p. 1 (1879).

1612. ——. Mt. Mulligan, 10 miles W.byN. of Thornborough, 55 miles W. of Cairns. *Co.* Hodgkinson; *Dist.* Cook. *Analyses: See* Coal Table, Nos. 381, 382, 445. *Ref.* A.R., p. 132 (1907), and Q.G.M. Jour., p. 280 (1909).

1612A1.——. Mt. Mulligan (*ante*). *Analyses, 10 samples,* Coal, *see* 382A-382J. Q.G.M.J., p. 405 (1911).

1612A.——. Allsort's, or Two-mile Cr., 3 miles N.E. of Koorboora Township, 111 miles (by rail and road) S.W.byW. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* Q.G.M. Jour., vol. 11, p. 175 (1910).

1612B.—— (seam 13 in. wide). Stanley Is., Flinders Group, 114 miles direct N.W. of Cooktown. *Co.* Melville; *Dist.* Cook. *Ref.* A.R.D.M., 1904, p. 48.

1613. —— (semi-anthracite). St. George Coal Mine, Dave Cr., nr. Fairlight Stn., Little R. Coalfield, 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mossman; *Dist.* Cook. *Analyses: See* Coal Table, Nos. 316-318, and 323. *Ref.* G.S.Q. Pub. 91, p. 2 (1893).

1614. ——. Below junction of Dave Cr., E. of Little R., nr. Fairlight, Little R. Coalfield (*ante*). *Analysis: See* Coal Table, No. 321. *Ref.* G.S.Q. Pub. 91, p. 2 (1893).

1615. ——. Four miles above Fairlight Stn., Little R. Coalfield (*ante*). *Analysis: See* Coal Table, No. 319. *Ref.* G.S.Q. Pub. 11, p. 3 (1882).

1616. ——. Shaft in creek, nr. Fairlight, Little R. Coalfield (*ante*). *Analysis: See* Coal Table, No. 322. *Ref.* O.R.

1617. ——. Bank of Little R., nr. Bowerbird Gully, Little R. Coalfield (*ante*). *Analysis: See* Coal Table, No. 320. *Ref.* G.S.Q. Pub. 92, p. 175 (1892).

1617A.—— (lignite). Russell R. Goldfield, 20 miles W.byN. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 67 (1900).

1618. —— (anthracitic). Pascoe R., Weymouth Bay, Bowden Mineral Field, 240 miles N.W. of Cooktown. *Co.* Weymouth; *Dist.* Cook. *Analyses: See* Coal Table, Nos. 348, 349. *Ref.* A.R., 1905, p. 11.

1619. ——. Cambooya, 24 miles (by rail) S.W. of Toowoomba (main line). *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* Q.M.

1620. ——. Clifton Colliery, 145 miles W.S.W. of Brisbane (mail line). *Co.* Aubigny (*ante*). *Analyses: See* Coal Table, Nos. 90, 91. *Ref.* G.S.Q. Pub. 80, p. 4 (1891), and 92, pp. 339, 341 (1892).

1621. ——. Below basalt in well. Clifton, 42 miles (by rail) S. of Toowoomba (main line). *Co.* Aubigny (*ante*). *Ref.* A.C.G.

1621A.——. Balgowan, nr. Muldu Rail. Stn., about 12 miles N. of Oakey. *Co.* Aubigney (*ante*). *Analyses: See* Coal Table, Nos. 343, 344. *Ref.* Q.G.M.J., pp. 158, 159 (1912).

1622. ——. Grazing Farm, Por. 9A, Dingo Pt., Par. of Jimbour, between Dalby and Jimbour, 9 miles N.byW. of Dalby. *Co.* Aubigny (*ante*). *Ref.* G.S.Q. Pub. 103, p. 6 (1894).

1622A.——. Sharer's Sel., Por. (290), Par. of Jimbour, Oaklands, about 8 miles N. of Dalby. *Co.* Aubigny (*ante*). *Analyses: See* Coal Tables, 107 and 108. *Ref.* A.R., p. 230 (1910), and Q.G.M. Jour., vol. 11, p. 388 (1910).

1623. ——. Below Basalt. Gowrie Coal Mine, 7 miles (by rail) N.W.byN. of Toowoomba. *Co.* Aubigny (*ante*). *Analysis: See* Coal Table, No. 238. *Ref.* O.M. and L.B., 7, p. 723 (1902).

1623A.——. Por. 27V., Par. of Meringandan, 1 mile N. of Kingsthorpe Rail. Stn. (Western line). *Co.* Aubigny (*ante*). *Analysis: See* Coal Table, No. 239. *Ref.* A.R., p. 262 (1910).

1624. ——. Hodgson's Cr., 6 miles W.S.W. of Cambooya Rail. Stn. (Main Rail.). *Co.* Aubigny (*ante*). *Analysis: See* Coal Table, No. 75. *Ref.* G.S.Q. Pub. 92, pp. 339 and 341 (1892).

1624A.——. Seam 11 ft. thick at 60 ft. in Cretaceous beds. *Loc.* Wellcamp Sub-Artesian Bore, No. 436, nr. Wellcamp Rail. Stn., 13 miles W. of Toowoomba. *Co.* Aubigny (*ante*). *Ref.* A.R.H.E. (1911).

1625. ——. In shaft. Jimbour Head Stn., 12 miles N.E. of Macalister Rail. Stn. (Western line.) *Co.* Aubigny (*ante*). [Coal seam was worked many years ago.] *Ref.* B.D., and G.S.Q. Pub. 103, p. 6 (1895).

1625A.——. King's Cr. Coal Mines, 40 miles S. of Toowoomba. *Co.* Aubigny (*ante*). *Ref.* G.S.Q. Pub. 87, p. 4 (1892).

1625B.——. Nr. Taylor's Siding, Crow's Nest Rail. Stn., 24 miles N. of Toowoomba *Co.* Aubigny (*ante*). *Analysis: See* Coal Table, No. 380. *Ref.* A.R., p. 288 (1910).

1625C.——. Kingsthorpe Mines—Sugarloaf, Kingsthorpe, Sunrise, and Enterprise.

1626. ——. Federal Colliery, Oakey, 19 miles (by rail) N.W. of Toowoomba (Western line). *Co.* Aubigny (*ante*). *Analysis: See* Coal Table, No. 345. *Ref.* A.R., 1907, p. 111.

1626 (1). ——. In well in road. Agricultural Sel. 2555, Por. 15, Par. of Cameby, 11 miles S. of Chinchilla Rail. Stn. *Co.* Bulwer; *Dist.* Darling Downs. *Ref.* Warden, Roma.

1626A1.——. In Golder's Sel. at Mt. Domville, 6 miles S.byW. of Millmerran. *See* Coal Table, No. 337A. *Ref.* A.R., p. 20 (1912).

1626A. ——. Por. 13V., etc., Par. of Chinchilla, ¾-mile S.W. of Chinchilla Rail. Stn. (Western line), 203 miles (by rail) W.N.W. of Brisbane. *Co.* Lytton; *Dist.* Darling Downs. *Refs.* Q.G.M.J., vol. 11, p. 286 (1910), G.S.Q. Pub. 235, pp. 14-17 (1911).

1627. ——. 14-ft. seam of bright, black coal; depth 180 ft. in bore. Por. 93, Par. Colamba, 6½ miles N. of Chinchilla, 209 miles (by rail and road) W.N.W. of Brisbane. *Co.* Lytton (*ante*). *Refs.* O.R. and G.S.Q. Pub. 235, pp. 14-17 (1911). [Blantyre Coal Co.].

1628. ——. Bringalilly Cr., br. of Canning Cr., 25 miles N. of Inglewood Rail. Stn. (Warwick br. line). *Co.* Marsh; *Dist.* Darling Downs. *Analysis: See* Coal Table, No. 247. *Ref.* Q.G.M.J., 1902, p. 562.

1629. ——. Coal Mine, 1 mile W. of Allora Rail. Stn. *Co.* Merivale; *Dist.* Darling Downs. *Analysis: See* Coal Table, No. 411. *Ref.* "Queensland," by Daintree, p. 79.

1630. Coal. Por. 1985, Avoca Farm, 2 miles S.E. of Emu Vale Rail. Stn., 18 miles (by rail and road) E. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 87, p. 5 (1892).

1631. ——. Coalpit Gully, Farm Cr., 3 miles E.N.E. of Tannymorel Rail. Stn. (Killarney line), 23 miles (by rail and road) E.S.E. of Warwick. *Co.* Merivale (*ante*). *Analyses: See* Coal Table, Nos. 372, 373. *Ref.* G.S.Q. Pub. 87, p. 5 (1892), and A.R., pp. 19, 23 (1905).

1632. ——. Bituminous, gaseous. In well at 40 ft. from the surface. Seams 1 ft., 2 ft., and about 6 ft., latter in bore below well at 70 ft. *Loc.* J. McMillan's Sel., ¼-mile S.W. of Cemetery, nr. Allora Rail. Stn. *Co.* Merivale (*ante*). *Ref.* B.D.

1633. ——. Por. 848, 849, Emu Cr., 3 miles E. of Emu Vale Rail. Stn. (Killarney Br. line), 19 miles (by rail and road) E. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 87, p. 5 (1892).

1633A.——. Near Maryvale Rail. Stn., about 19 miles (by rail) N.E. of Warwick. *Co.* Maryvale (*ante*). *Analyses: See* Coal Table, Nos. 335, 366. *Ref.* A.R., pp. 39, 100 (1912). Several small seams in shaft. Largest 18 in., with bands over 6 in. thick between. No. 335 is a general sample, 336 sample of 18-in. seam.

1633B.——. Mt. Thabor, along Mary Vale Road, on Por. 439 (?), Par. of Warwick, 3 miles N.E. of Warwick. *Co.* Merivale (*ante*). *Analysis: See* Coal Table, No. 403. *Ref.* A.R., 1910, p. 281.

1633C.——. Mt. Thabor (*ante*). *Analysis: See* Coal Table, No. 403A. *Ref.* A.R., p. 347 (1911).

1634. ——. Tannymorel Coal Mine, Tannymorel, 23 miles (by rail) E.byS. of Warwick, on Killarney Br. line. *Co.* Merivale (*ante*). *Analysis: See* Coal Table, No. 378. *Ref.* A.R., 1906, p. 53.

1634A.——. Tannymorel Coal Mine (*ante*). *Analysis: See* Coal Table, No. 379. *Ref.* A.R., p. 42 (1912).

1635. ——. Green's Well, Tannymorel (*ante*). *Analyses: See* Coal Table, Nos. 374-377. *Ref.* A.R., 1906, p. 53.

1636. ——. Por. 36, Par. of Glengallan, 7 miles N. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 87, p. 4 (1892).

1636A.——. Por. 73v., Par. of Glengallan, about 4 miles W.S.W. of Allora. *Co.* Merivale (*ante*). *Analysis: See* Coal Table, No. 12. *Ref.* A.R., p. 275 (1910).

1637. —— (cannel). In well, Spreadborough's Sel. (1855), Killarney, 28 miles (by rail) E.S.E. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 87, p. 5 (1892).

1638. ——. Sels. 5 and 7, Par. of Canning, nr. Swan Cr. Rail. Stn., 7 miles E. of Warwick (Killarney line). *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 87, p. 4 (1892).

1639. ——. Nr. Talgai Rail. Stn., 17 miles N. of Warwick. *Co.* Merivale. (*ante*). *Ref.* G.S.Q. Pub. 87, p. 4 (1892).

1640. ——. Government Well, Winton, 132 miles S.S.W. of Hughenden Rail. Stn., Gt. Northern line. *Co.* Ayrshire; *Dist.* **Gregory North.** *Analysis: See* Coal Table, No. 407. *Ref.* G.S.Q. Pub. 10, p. 20 (1885).

1641. ——. Sheppards' Well, Winton (*ante*). *Analysis: See* Coal Table, No. 408. *Ref.* G.S.Q. Pub. 10, p. 20 (1885), (Reprint 136, p. 40 (1898).

1641A. ——. In bore. Winton, 368 miles (by rail) S.W. of Townsville; *Co.* Ayrshire (*ante*).

1641B.——. Seam 7 ft. thick in Cretaceous beds. *Loc.* Kynuna No. 5 Artesian Bore, No. 306, Tumulca Cr., about 80 miles N.W.byW. of Winton Rail. Stn. *Co.* Kynuna; *Dist.* Gregory North. *Ref.* A.R.H.E. (1911).

1642. ——. Well, Ayrshire Downs, 3 miles S.E. of Werna, 35 miles N.N.W. of Winton. *Co.* Wokingham; *Dist.* Gregory North. *Analysis: See* Coal Table, No. 409. *Ref.* G.S.Q. Pub. 10, p. 20 (1882), (Reprint 136, p. 42 (1898).

1642A.——. Stewart's Cr. Rail. Cutting, 6 miles (by rail) S. of Townsville. *Co.* Elphinstone; *Dist.* **Kennedy North.** *Analyses: See* Coal Table, Nos. 401, 402. *Ref.* G.S.Q. Pubs. 35, p. 14 (1887), 196, pp. 18-20 (1905), A.R., 1905, p. 3, and Q.G.M.J., vol. 7, pp. 406-9 (1906).

1643. ——. Black's Cr., Mt. Spencer Run, 30 miles S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* O.M.

1644. ——. Por. (1450), Black Rock Cr., 35 miles N.W. of Mackay. *Co.* Carlisle (*ante*). *Analyses: See* Coal Table, Nos. 326-328D. *Ref.* G.S.Q. Pubs. 53, p. 7 (1889), 164, p. 14 (1901), 175, p. 13 (1902), and 181, p. 8 (1903), and Q.G.M.J., 1910, p. 283.

1645. ——. In gullies between Blenheim Stn. and Mt. Leslie, 65 miles S.byW. of Bowen R. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 54, p. 5 (1889).

1646. —— (inferior anthracitic). Hampden, Constant Cr., 20 miles N.W. of Mackay. *Co.* Carlisle (*ante*). *Analyses: See* Coal Table, Nos. 329, 330. *Ref.* G.S.Q. Pub. 164, pp. 12, 13 (1901).

1647. ——. Mt. Toby, 4½ miles N. of Mirani Rail. Stn., 26 miles (by rail and road) W. of Mackay. *Co.* Carlisle (*ante*). *Analysis: See* Coal Table, No. 331. *Ref.* G.S.Q. Pub. 164, p. 14 (1901).

1648. ——. Murray Cr., trib. of Cattle Cr., 34 miles W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 164, p. 14 (1901).

1649. ——. St. Helen's Cr., 30 miles N.W. of Mackay. *Co.* Carlisle (*ante*). *Analysis: See* Coal Table, No. 332. *Ref.* G.S.Q. Pub. 39, p. 2 (1887), and 164, p. 14 (1904).

1650. ——. Daintree Seam, Bowen R., Bowen R. Coalfield, 60 miles S.W.byS. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Analyses: See* Coal Table, Nos. 17-21 and 38, 39. *Ref.* G.S.Q. Pub. 4, pp. 36, 38, 39 (1879).

1651. ——. Macarthur's Seam, Macarthur's Cr., Bowen R. Coalfield (*ante*). *Analysis: See* Coal Table, No. 26. *Ref.* G.S.Q. Pub. 4, p. 38 (1879).

1652. ——. Garrick Seam, Pelican Cr., Bowen R. Goldfield (*ante*). *Analyses: See* Coal Table, Nos. 22, 23. *Ref.* G.S.Q. Pub. 4, p. 37 (1879).

1653. ——. No. 1 Bore, Garrick Seam (*ante*). *Analysis: See* Coal Table, No. 24. *Ref.* L.B. 1, p. 702 (1885), G.S.Q. Pub. 22, p. 56 (1886), and A.R.D.M., 1885, p. 55.

1654 ——. Kennedy Seam, Pelican Cr., Bowen R. Coalfield, 60 miles S.S.W. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Analysis: See* Coal Table, No. 25. *Ref.* G.S.Q. Pub. 4, p. 37 (1889).

1655. ——. Kennedy Seam (?), Pelican Cr., Bowen R. Coalfield (*ante*). *Analysis: See* Coal Table, No. 27. *Ref.* L.B. 1 (1885), and G.S.Q. Pub. 31, p. 47 (1886).

1655A. ——. Pelican Cr., Bowen R. Coalfield (*ante*). *Analysis: See* Coal Table No. 28. Thickness of seam, 4 ft. 6 in., with two bands. One band, less than 1 in. thick, is about 1 ft. from the top; the other, of same thickness, is 1 ft. from the bottom.

1656. ——. Byerwin Stn. Well, Kangaroo Cr., 75 miles S.W.byS. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Analysis: See* Coal Table, No. 16. *Ref.* G.S.Q. Pub. 181, p. 21 (1903).

1657. ——. Kangaroo Cr., Byerwin Run, 70 miles S.W.byS. of Bowen (*ante*). *Ref.* G.S.Q. Pub. 54, p. 5 (1889).

1658. ——. Greendale Well, Eaglefield Cr., 25 miles E. of Elphinstone Stn., 90 miles W.S.W. of Mackay. *Co.* Drake; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 54, p. 4 (1889).

1659. ——. Nr. Durham Downs Stn., 40 miles N.byE. of Roma. *Co.* Aberdeen; *Dist.* Leichhardt. *Ref.* O.M.

1659A. ——. Expedition Cr., 64 miles W.byS. of Banana. *Co.* Bauhinia; *Dist.* Leichhardt. *Ref.* O.R.

1659B. ——. Seam several feet thick in bore, 300 feet from the surface. *Loc.* about 3 miles S.E. of Malvern Downs Stn., and 17 miles E. of Capella Rail. Stn. (Clermont line). *Co* Cairns; *Dist.* Leichhardt.

1659C. ——. Outcrops W. side of Oakey Cr., 12 miles E. of Malvern Downs Stn., and 28 miles E. of Capella Rail. Stn. (Clermont line). *Co.* Cairns; *Dist.* Leichhardt.

1660. —— (bands). *Assoc.with* Gold, in alluvial deposits. *Loc.* Bantam Claim, Deep Ground, Black Ridge, 12¾ miles N.byW. of Clermont. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 201, p. 109 (1906).

1661. —— (as bands). *Assoc.with* Gold, in alluvial deposits. *Loc.* Eldorado Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 113 (1906).

1662. —— (as bands). *Assoc.with* Gold and Epsomite, in alluvial deposits. *Loc.* Mason's Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 50 (1906).

1663. —— (as bands). *Assoc.with* Gold, in alluvial deposits. *Loc.* Nipper Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 122 (1906).

1664. —— (as bands). *Assoc.with* Gold, in alluvial deposits. *Loc.* True Blue Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 129 (1906).

1665. Coal (dull). Bastet's M.L. (36), Blair Athol, Clermont Coalfield, 11 miles (by rail) N.W. of Clermont, and 240 miles (by rail and road) N.W.byN. of Rockhampton. *Co.* Clermont; *Dist.* Leichhardt. *Analysis: See* Coal Table, No. 77. *Ref.* G.S.Q. Pub. 148, p. 12 (1900).

1666. ——. Blair Athol Colliery, Clermont Coalfield (*ante*). *Analyses: See* Coal Table, Nos. 73, 78, and 79. *Ref.* G.S.Q. Pub. 148, pp. 10, 11 (1900).

1667. ——. Eldorado Colliery, Blair Athol, Clermont Coalfield (*ante*). *Analysis: See* Coal Table, No. 81. *Ref.* G.S.Q. Pub. 148, p. 12 (1900).

1668.——. *Assoc.with* Turgite. *Loc.* Federal Colliery, Blair Athol (*ante*). *Ref.* G.S.Q. Pub. 201, p. 85 (1906).

1669. ——. Hope Colliery, Blair Athol (*ante*). *Analyses: See* Coal Table, Nos. 82 and 83. *Ref.* G.S.Q. Pub. 148, p. 12 (1900).

1670. ——. Imbell Colliery, Blair Athol (*ante*). *Analysis: See* Coal Table, No. 84. *Ref.* G.S.Q. Pub. 148, p. 12 (1900).

1671. ——. Mercer's Lease (32), Blair Athol (*ante*). *Analysis: See* Coal Table, No. 85. *Ref.* G.S.Q. Pub. 148, p. 16 (1900).

1671A——. Newcastle Colliery, Blair Athol (*ante*). *Note.*—Recent developments by the Newcastle Coal Company, Ltd., show that their working shaft passed through 72 feet of good clean coal, the bottom portion showing an analysis between two and three per cent. of ash.

1672. —— (small bands, inferior, Cretaceous (?) Age). *Loc.* Flyspeck, McDonald's Flat, 4½ miles S.S.E. of Clermont. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 148, p. 11 (1900).

1672A.——. Five-foot seam, 80 ft. below surface, over gold "lead." *Loc.* Hurley's Flat, 3 miles W.S.W. of Blair Athol, Clermont Rail. line. *Co.* Clermont (*ante*).

1673. —— (bands). *Assoc.with* Gold, in conglomerate, in alluvial deposits. *Loc.* Lower Camp, Mill's Cr., Miclere, 17 miles N.byW. of Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 201, p. 70 (1906).

1674. —— (as small bands). Quarry Hill Shaft, Clermont. *Co.* Clermont (*ante*). *Analysis: See* Coal Table, No. 86. *Ref.* G.S.Q. Pub. 148, p. 12 (1900).

1675. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Appleton's Claim, Linklater's Lead, The Springs, 11 miles N.N.W. Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 201, p. 21 (1906).

1676. —— (bands). *Assoc.with* Gold, in old alluvial deposits. *Loc.* Spring Cr., The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 19 (1906).

1676A.——. Ten-foot seams in bores. Varies from 80 ft. to 200 ft. below the surface. Occurs below flows of basalt. *Loc.* various places on Meteor Downs and Orion Downs Runs, about 20 miles S.E. of Springsure. *Co.* Denison; *Dist.* Leichhardt. *Ref.* B.D. NOTE: Evidently the coal measures here are a continuation of those existing on the Dawson River further east.

1677. ——. Coringa, 35 miles N.byW. of Miles Rail. Stn. (Western line). *Co.* Fortescue; *Dist.* Leichhardt. *Ref.* O.M.

1678. ——. Roche Cr., nr. Rochedale Stn., 50 miles N.N.W. of Miles Rail. Stn. (Western line. *Co.* Fortescue (*ante*). *Analysis: See* Coal Table, No. 337. *Ref.* O.M.

1679. ——. Taroom, 75 miles N.byW. of Miles Rail. Stn., and 306 miles (by rail and road) from Brisbane (Western line). *Co.* Fortescue (*ante*). *Ref.* O.M.

1680. ——. McFadgen's Mine, Annandale South, nr. Denham Range, 80 miles W.N.W. of St. Lawrence. *Co.* Grosvenor; *Dist.* Leichhardt. *Ref.* O.M.

1681. ——. Cherwell Cr., trib. of Isaacs R., 40 miles S. of Lake Elphinstone Stn., 80 miles S.W. of Mackay. *Co.* Grosvenor (*ante*). *Ref.* O.M.

1682. ——. Eurora Run, nr. Elphinstone, 70 miles S.W. of Mackay. *Co.* Grosvenor (*ante*). *Ref.* O.M.

1683. ——. As blocks in river debris, 25 miles S. of Greendale Well, S. of Eungella Stn., Isaacs R. *Co.* Grosvenor (*ante*). *Ref.* B.D.

1684. ——. In well, 3 miles W. of Lenton Downs, 80 miles W.S.W. of Mackay. *Co.* Grosvenor (*ante*). *Ref.* G.S.Q. Pub. 54, p. 4 (1889), and O.M.

1685. ——. Bluff Colliery, 107 miles (by rail) W. of Rockhampton (Central line). *Co.* Humboldt; *Dist.* Leichhardt. *Analyses: See* Coal Table, Nos. 110-122, 416-419. *Ref.* L.B. 8, p. 570 (1894), A.R., p. 24 (1905), and p. 132 (1908), and G.S.Q. Pub. 151 (1901), and Q.G.M. Jour., p. 16 (1905).

1686. ——. Bluff Colliery (*ante*). *Analysis: See* Coal Table, No. 214. *Ref.* L.B. 8, p. 411 (1903).

1687. —— (semi-bituminous). Columba Colliery, S. br. of Wild Horse Cr., 2½ miles N.W. of Graham's Siding (Central Rail. line). *Co.* Humboldt; *Dist.* Leichhardt. *Analyses: See* Coal Table, Nos. 126-132. *Ref.* A.R., p. 21 (1905), p. 49 (1906), Q.G.M. Jour., p. 330 (1904), Q.G.S. Pub. 155, etc. (1901).

1688. —— (bituminous). Comet R., nr. Comet Rail. Stn. (Central line), 141 miles W. of Rockhampton. *Co.* Humboldt (*ante*). *Analysis: See* Coal Table, No. 136. *Ref.* Q.M.

1688A.——. Frenchman's Plains Coal Mine, Blackwater Cr., N.E. of Blackwater Rail. Stn. (Central line), 119 miles W. of Rockhampton. *Co.* Humboldt (*ante*). *Ref.* B.D.

1689. —— (semi-bituminous). Mammoth Coal Mine (Frenchman's Plains Seams), nr. Blackwater Rail. Stn. (Central line) (*ante*). *Analyses: See* Coal Table, Nos. 186-201, and 428. *Ref.* G.S.Q. Pub. 155 (1901), Q.G.M. Jour., p. 330 (1904), L.B. 8, pp. 175 (1903), 507, 559 (1904), A.R., pp. 3 (1905), 55, 57 (1906).

1689A.—— (semi-bituminous), nr. Stanley Rail. Stn. *Co.* Humboldt (*ante*). *Analyses: See* Coal Table, No. 215 (unofficial).

1690. ——. As small seams, separated by thick clay bands. *Loc.* Nr. Tolmie's Rail. Stn. (Central line), 129 miles W. of Rockhampton. *Co.* Humboldt (*ante*). *Analyses: See* Coal Table, Nos. 216-219. *Ref.* G.S.Q. Pub. 107 (1895), and p. 155 (1901).

1690A.——. Coldwater Stn., Cardowan Run, Connor's R., 66 miles S.byW. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* O.M.

1691. —— (semi-anthracitic). Dawson Co.'s Coal Mines, W. side of Dawson R., 75 miles S.W. of Rockhampton. *Cos.* Ferguson and Kimberley; *Dist.* Leichhardt. *Analyses: See* Coal Table, Nos. 139-158, 422. *Ref.* G.S.Q. Pub. 155, p. 6 (1901), L.B. 8, p. 194 (1903), Q.G.M. Jour., pp. 15, 654 (1905), A.R., p. 90 (1907), and G.S.Q. Pub. 216, p. 31 (1907).

1691A.——. In Government Bores, E. side of Dawson River (*ante*). *Analyses: See* Coal Table, Nos. 159-161D.

1691B.——. W. side of Dawson River (*ante*). *Analyses: See* Coal Table, Nos. 161E-164.

1692. —— (semi-anthracitic). Dunstan Coal Mine, Dawson R., 35 miles S .of Boolburra Rail Stn. (Central line), 94 miles (by rail and road) S.W. of Rockhampton. *Co.* Kimberley (*ante*). *Analyses: See* Coal Table, Nos. 165-180, 425. *Ref.* G.S.Q. Pub. 155, pp. 6 and 25 (1901), A.R.D.M., pp. 170 and 171 (1902), Q.G.M. Jour., p. 14 (1905), A.R., pp. 72, 75 (1906).

1693. —— (lignite). Small bands in clay deposits of Cretaceous (?) Age. *Loc.* Duaringa Bore, nr. Duaringa Rail. Stn. (Central line), 66 miles W.S.W. of Rockhampton. *Co.* Kimberley (*ante*). *Ref.* B.D.

1694. ——. Wallaroo Coal Mine, 3 miles S. of Tryphinia Rail. Stn. (Central line), 81 miles (by rail and road) W. of Rockhampton. *Co.* Kimberley (*ante*). *Analyses: See* Coal Table, Nos. 435-437. *Ref.* A.R., p. 10 (1905), and O.R.

1695. —— (semi-bituminous). From bores on Wallaroo Mine (*ante*). *Analyses: See* Coal Table, Nos. 184, 222-226. *Ref.* A.R.D.M., p. 173 (1903), Q.G.M. Jour., pp. 128, 330 (1904), A.R., p. 6 (1905).

1696. —— (semi-bituminous). Jellinbah, Mackenzie R., 22 miles N.byW. of Blackwater Rail. Stn. (Central line), 141 miles (by rail and road) W.byN. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Analyses: See* Coal Table, Nos. 206-210, 430-432. *Ref.* G.S.Q. Pub. 155, p. 25 (1901), L.B. 7, p. 785 (1902), A.R., pp. 6, 10 (1905).

1696A.——. Few inches thick. In well 80 ft. deep. *Loc.* 3 miles S. of Anakie Rail. Stn. *Co.* Plantagenet; *Dist.* Leichhardt.

1697. ——. Por. (17v) (Thompson's), Capella, 197 miles (by rail) W.byN. of Rockhompton (Central line). *Co.* Talbot; *Dist.* Leichhardt. *Analysis: See* Coal Table, No. 80. *Ref.* G.S.Q. Pub. 107, p. 5 (1895).

1698. ——. Bedourie Stn., 160 miles S.W. of Rockhampton. *Co.* Tingarra; *Dist.* Leichhardt. *Ref.* O.M.

1699. ——. As a large seam. Hutton Cr., Mt. Hutton Stn., 65 miles N. of Roma. *Co.* Westgrove; *Dist.* Leichhardt. *Ref.* O.M.

1699A. Coal. 40 miles N. of Roma. *Co.* Westgrove (*ante*). *Analyses: See* Coal Table, No. 350. *Ref.* A.R., p. 343 (1911).

1700. ——. Head of Bee Cr., nr. Elphinstone Stn., 60 miles W.S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 200, p. 15 (1905).

1701. —— (anthracitic). Bee Cr., junction of Hail Cr., 11 miles W.byN. of Finch-Hatton Rail. Stn. (Mackay line), and 18 miles N.W.byW. of Nebo. *Co.* Wodehouse (*ante*). *Analysis: See* Coal Table, No. 334. *Ref.* G.S.Q. Pubs 39, p. 21 (1887), 54, p. 4 (1889), 200, p. 15 (1905).

1702. ——. Black Waterhole Cr., 5 miles N.byE. of Hazledean, 40 miles (by rail and road) S.W. of Mackay (*viâ* Eton Rail. Stn.). *Co.* Wodehouse (*ante*). *Ref.* G.S.Q. Pub. 164, p. 7 (1901).

1702A. ——. Said to be from seam several feet thick. *Loc.* H. E. Edward's property, St. Albans, nr. Fort Cooper. *Par.* Womberoo. *Co.* Wodehouse (*ante*).

1703. ——. Head of Cooper Cr., 4 miles W. of Mt. Britton, 50 miles W.S.W. of Mackay. *Co.* Wodehouse (*ante*). *Ref.* G.S.Q. Pub. 200, p. 15 (1905).

1704. —— (anthracitic). Walker's Cr., 2 miles above junction of Carborough Cr., 10 miles W. of Nebo. *Co.* Wodehouse (*ante*). *Analysis: See* Coal Table, No. 333. *Ref.* G.S.Q. Pubs. 39, p. 3 (1887), and 200, p. 14 (1905).

1705. ——. Between Kerlong and Coppermine Range, nr. Mt. Orange, 52 miles S.W. of Cape Palmerston. *Co.* Wodehouse (*ante*). *Ref.* A.G.M.

1706. ——. Mt. Yuckawow, 5 miles E. of Elphinstone, about 72 miles S.W.byW. of Mackay. *Co.* Wodehouse (*ante*). *Ref.* O.M.

1706A. ——. Exposed in bank of river, Forest Vale Station, Maranoa River, 40 miles N. of Mitchell Rail. Stn. (Western line). *Co.* Bundara; *Dist.* **Maranoa.** *Analysis:* Moisture = 5 per cent.; vol. hydrocarbons = 46·25 per cent.; fixed carbon = 34·2 per cent.; ash = 14·55 per cent. *See* Coal Analysis, No. 338.

1706B. —— (bands). At 930 ft., in Cretaceous beds. *Loc.* Mitchell Town Artesian Bore, No. 37, 352 miles (by rail) W. of Brisbane. *Co.* Dublin; *Dist.* Maranoa. *Ref.* A.R.H.E. (1911).

1706C. ——. Bungeworgorai Creek, 16 miles N. of Hodgson Rail. Stn. *Co.* Waldegrave; *Dist.* Maranoa. *Ref.* W.E.C.

1706D. ——. In large loose lumps and small seams. Bungeworgorai Creek, near Euthulla Stn., 31 miles N. of Muckadilla Rail. Stn. *Co.* Waldegrave (*ante*). *Ref.* W.E.C.

1707. ——. Between Mt. Abundance and Rail. line, 10 miles S.S.E. of Muckadilla Rail. Stn. (Western line), 36 miles (by rail and road) W. of Roma. *Co.* Waldegrave (*ante*).

1707A. ——. Eight seams varying from 3 in. to 2 ft., *assoc.with* Natural Gas. *Loc.* Roma No. 2 Artesian Bore, No. 46(2). *Co.* Waldegrave (*ante*). *Ref.* A.R.H.E. (1911).

1707A1. ——. Two bores, in one, 11 ft. coal at 800 ft., in other, 40 ft. coal at 400 ft. Welford Lagoon, junction of Barcoo R. and Powlett's Cr., 120 miles W.S.W. of Blackall. *Co.* Cheviott; *Dist.* **Mitchell.** *Ref.* O.R.

1707B. ——. Band at 860 ft. in Cretaceous beds. *Loc.* Camoola Artesian Bore, No. 198, about 30 miles N.N.E. of Longreach Rail. Stn. (Central line). *Co.* Cumberland; *Dist.* Mitchell. *Ref.* A.R.H.E. (1911).

1707C. ——. Seam 1 ft. thick at 3,149 ft., in Cretaceous beds. *Loc.* Darr River Downs Artesian Bore, No. 245, about 50 miles N.N.W. of Longreach Rail. Stn. *Co.* Cumberland (*ante*). *Ref.* A.R.H.E. (1911).

1708. —— (lignite). As a fragment, in sandstone. Muttaburra Bore, at depth of 2,700 ft., 65 miles N.N.E. of Longreach Rail. Stn. (Central line). *Co.* Cumberland; *Dist.* Mitchell. *Ref.* B.D.

1709. ——. *Assoc.with* Blue Shale, in 70 ft. shaft. *Loc.* McLennan's Grazing Farm, 16 miles from Isisford. *Co.* Mitchell (*ante*). *Ref.* B.D.

1709A. ——. Seam of good coal at 150 ft., in Cretaceous beds. *Loc.* Rosedale Artesian Bore, No. 318, close to Longreach Rail. Stn. (Central line). *Co.* Portland; *Dist.* Mitchell. *Ref.* A.R.H.E. (1911).

1709B. ——. Seam 4 ft. 6 in. thick, 40 ft. in well. Moonda Park, near Thompson River and about 75 miles S.W. of Longreach Rail. Stn. (Central line). *Co.* Wolseley; *Dist.* Mitchell.

1709c.—— (bands). At 3,700 ft., in Cretaceous beds. *Loc.* Bimerah No. 2 Bore, Bimerah Lease Bores, No. 167(2), about 65 miles S.W.byS. of Longreach Rail. Stn. *Co.* Wolseley; *Dist.* Mitchell. *Ref.* A.R.H.E. (1911).

1709d.——. Prairie (near), 28 miles E. of Hughenden. *Co.* Woura; *Dist.* Mitchell. *Analysis: See* Coal Table, No. 245a. *Ref.* A.R., p. 279 (1910).

1709e.——. Blantyre Coal Mine, 7 miles N. of Karoon Rail. Stn., 9 miles from Warreah. *Co.* Woura (*ante*). Note: Shaft 562 ft. deep. Cretaceous shells at 294 ft., 4-in. coal band at 406 ft., 3 ft. of coal bands at 532 ft., 2 ft. 6in. of coal at 562 ft., and white sandstone at 555 ft. The sandstone yielded 2,200 gals. of water per hour, and caused the cessation of operations. *See* Analyses under Coal, Nos. 402a, 402b. *See also under* Coal Bores.

1710. ——. Bullock Cr., 195 miles S.W. of Townsville, and 18 miles from Warreah Rail. Stn. *Co.* Woura (*ante*). *Ref.* A.R.D.M., p. 51 (1884).

1711. ——. Donnelly's Sel. (39v), Paynter's Cr., Blackall Range, 2½ miles W. of Eudlo Rail. Stn. (North Coast line), 57 miles N. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Analysis: See* Coal Table, No. 231. *Ref.* G.S.Q. Pub. 98, p. 4 (1894).

1711a.——. Four miles from (north?) of Landsborough Rail. Stn., on Blackall Range *Co.* Canning; *Dist.* Moreton.

1712. ——. In well, 40 ft. from surface. *Loc.* Caboolture Butter Factory, 31 miles (by rail) N. of Brisbane (North Coast line). *Co.* Canning (*ante*).

1713. ——. Caloundra Head (north and south end), 45 miles N. of Brisbane. *Co.* Canning (*ante*). *Analyses: See* Coal Table, Nos. 34 and 35. *Ref.* A.R., p. 142 (1908).

1714. ——. Torway Cr., N. of Caloundra Head, 45 miles N. of Brisbane. *Co* Canning (*ante*). *Analysis: See* Coal Table, No. 42. *Ref.* A.R., p. 143 (1908)

1714a.——. Of inferior quality. Toorbul Point, 28 miles N. of Brisbane. *Co.* Canning (*ante*). *Ref.* B.D.

1715. —— (bituminous). Monkville, Palmwoods, 60 miles (by rail) N. of Brisbane (North Coast line). *Co.* Canning (*ante*). *Ref.* B.D.

1716. ——. Sel. 135, Par. of Mooloolah, nr. Nambour, 65 miles (by rail) N. of Brisbane. *Co.* Canning (*ante*). *Ref.* G.S.Q. Pub. 98, p. 2 (1894).

1717. ——. Cooyar Cr., 8 miles S.E. of Nanango. *Co.* Cavendish; *Dist.* Moreton. *Analysis: See* Coal Table, No. 339. *Ref.* A.R., p. 106 (1907).

1718. ——. Flagstone Cr., Helidon, 72 miles (by rail) W. of Brisbane (Main line). *Co.* Cavendish (*ante*). *Ref.* A.C.G.

1719. —— (lignite). In small bands, in "Ipswich" Measures. Murphy's Cr., 19 miles E. of Toowoomba (Main line). *Co.* Cavendish (*ante*). *Ref.* B.D.

1720. ——. Palm-tree Cr., 8 miles N. of Helidon, 37 miles (by rail and road) W. of Toowoomba (Main line). *Co.* Cavendish (*ante*). *Analysis: See* Coal Table, No. 242. *Ref.* A.R., p. 107 (1907).

1720a.——. Por. 84v, Par. of Cooyar, 3 miles E.byN. of Yarraman. *Co.* Cavendish (*ante*). *Analysis: See* Coal Table, No. 410. *Ref.* A.R., p. 366 (1911).

1721. —— (9 ft. seam). Head of Blackfellow's Cr., Par. of E. Haldon, 10 miles S. of Gatton Rail. Stn. (Main line). *Co.* Churchill; *Dist.* Moreton. *Analysis: See* Coal Table, No. 235. *Ref.* G.S.Q. Pubs. 31, p. 62 (1886), and 92, pp. 338, 341 (1892), and A.C.G.

1722. ——. Boonah, 59 miles (by rail) S.S.W. of Brisbane (Fassifern br. line). *Co.* Churchill (*ante*). *Ref.* O.R.

1722a. ——. (Several seams said to exist). *Loc.* 4 miles S.E. of Cunningham's Gap, near Clumber, to the S.W. of Boonah Rail Stn. *Co.* Churchill. *Dist.* Moreton. *Ref.* B.D.

1723. ——. Nr. Flagstone Cr., 8 miles S.W. of Helidon, 80 miles (by rail and road) S.W.byS. of Brisbane (Main line). *Co.* Churchill (*ante*). *Analysis: See* Coal Table, No. 241. *Ref.* G.S.Q. Pub. 92, p. 338 (1892).

1723a.——. Six-foot seam (?). Hell-hole Cr., near junction with Flagstone Cr., Drayton Commonage, 8½ miles S.W. of Helidon. *Co.* Churchill; *Dist.* Moreton.

1723b.——. Laidley Sub-artesian Town Bore, 51 miles (by rail) W.byS. of Brisbane. *Co.* Churchill (*ante*). *Ref.* G.S.Q. Pub. 92, p. 323 (1892).

1724. ——. Tent Hill Cr., br. of Lockyer Cr., nr. Gatton, 61 miles (by rail) W. of Brisbane (Main line). *Co.* Churchill (*ante*). *Ref.* A.C.G.

1725. Coal. Caledonian Colliery, Walloon, 6 miles W. of Ipswich, 30 miles (by rail and road) S.W. of Brisbane (Main line). *Co.* Churchill (*ante*). *Analysis: See* Coal Table, No. 306. *Ref.* G.S.Q. Pubs. 125, p. 60 (1897), 147, p. 21 (1899).

1726. ——. Walloon Colliery, Walloon (*ante*). *Analysis: See* Coal Table, No. 308. *Ref.* G.S.Q. Pub. 92, p. 345 (1892).

1727. ——. Nr. Walloon (*ante*). *Analysis: See* Coal Table, No. 307. *Ref.* G.S.Q. Pub. 92, pp. 337 and 341 (1892).

1727A.——. Dudley Colliery, Karrabin, 3 miles W. of Ipswich (*ante*). *Ref.* B.D.

1728. ——. West's Good Hope Mine, Yahmahnto (Loamside), 5 miles (by rail) S. of Ipswich (Fassifern br. line). *Co.* Churchill; *Dist.* Moreton. *Analyses: See* Coal Table, Nos. 309C, D, E. *Ref.* A.R., p. 22 (1905).

1728A.——. Good Hope Mine (West's), Yahmahnto (Loamside) (*ante*). *Analysis: See* Coal Table, No. 309. *Ref.* A.R., p. 317 (1911).

1728B.——. Good Hope Mine (*ante*). *Analyses: See* Coal Table, No. 309A, 309B.

1728C.——. Speedwell Colliery, Yahmahnto (Loamside) (*ante*). *Analyses: See* Coal Table, Nos. 310, 310A, 310B, 310C, 310D. *Ref.* A.R., pp. 320, 321, 322.

1729. ——. Aberdare Seam, Bundamba Coal Area, 21 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Analysis: See* Coal Table, No. 420. *Ref.* "Queensland," by Daintree, p. 77 (1873).

1730. ——. Aberdare Colliery, Bundamba Coal Area (*ante*). *Analyses: See* Coal Table, Nos. 249, 250. *Ref.* G.S.Q. Pubs. 125, p. 60 (1897), and 147, p. 21 (1899), and A.R., p. 137 (1908).

1730A.——. Abermain Colliery, Bundamba Coal Area (*ante*). *Ref.* O.R.

1730B.——. Blackheath Colliery, Bundamba Coal Area (*ante*). *Ref.* O.R.

1731. ——. Bogside Colliery, 2½ miles S.byE. of Bundamba Rail. Stn. (Main line). *Co.* Stanley; *Dist.* Moreton. *Analysis: See* Coal Table, No. 254. *Ref.* O.R.

1732. ——. Dobbie's Seam, Bonnie Dundee Colliery, 4 miles S.E. of Bundamba Rail. Stn. (Main line) (*ante*). *Analysis: See* Coal Table, No. 259. *Ref.* L.B. 8, p. 395 (1903).

1733. ——. Bonnie Dundee Colliery (*ante*). *Analysis: See* Coal Table, No. 255. *Ref.* A.R., p. 137 (1908).

1733A.——. Borehole Colliery, 1¼ mile S.byE. of Bundamba Rail. Stn. (Main line). *Co.* Stanley; *Dist.* Moreton.

1734. ——. Box Flat Colliery, about 1 mile S. of Bundamba Rail. Stn. (Main line) (*ante*). *Analysis: See* Coal Table, No. 256. *Ref.* A.R., p. 137, 1908.

1735. ——. Bundamba No. 4 or Hard Seam and No. 1 Seam, Braeside Colliery, ½-mile E.S.E. of Bundamba Rail. Stn. (Main line) (*ante*). *Analyses: See* Coal Table, Nos. 257, 258. *Ref.* G.S.Q. Pubs. 125, p. 60 (1897), and 147, p. 21 (1899).

1735A.——. Denham Colliery, about 3 miles S.byE. of Bundamba Rail. Stn. (Main line) (*ante*). *Ref.* O.R.

1736. ——. New Chum Seam, Dinmore Colliery, 1 mile S.W. of Dinmore Rail. Stn. (Main line), 20 miles (by rail and road) W. of Brisbane, Bundamba Coal Area. *Co.* Stanley; *Dist.* Moreton. *Analysis: See* Coal Table, No. 264. *Ref.* G.S.Q. Pubs. 125, p. 59 (1897), and 147, p. 21 (1899).

1737. ——. Donnybrook Colliery (Bishop Seam), 2 miles N. of Ipswich Rail. Stn. (Main line), North Ipswich Coal Area. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 282. *Ref.* G.S.Q. Pubs. 125, p. 60 (1897), and 147, p. 21 (1899).

1738. ——. Eastwood Colliery, ½-mile N. of Ipswich Rail. Stn. (Main line), North Ipswich Coal Area (*ante*). *Analysis: See* Coal Table, No. 284. *Ref.* G.S.Q. Pub. 92, pp. 336 and 341 (1892).

1738A.——. Ebbw Vale Colliery, Dinmore, 19 miles (by rail) W.S.W. of Brisbane (Main line), Bundamba Coal Area. *Par.* Goodna; *Co.* Stanley; *Dist.* Moreton.

1738B.——. Eclipse Colliery, North Ipswich Coal Area, 24 miles (by rail) W.S.W. of Brisbane (Main line). *Par.* Goodna; *Co.* Stanley (*ante*).

1738C.——. Fairbanks Colliery, Bundamba Coal Area, 21 miles (by rail) W.S.W. of Brisbane (Main line). *Par.* Goodna; *Co.* Stanley (*ante*).

1738D.——. Fernie Cr. Colliery, Bundamba Coal Area (*ante*).

1739. ——. Goodna Colliery, Redbank Rail. Stn. (Main line), 17 miles W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Analysis: See* Coal Table, No. 260. *Ref.* G.S.Q. Pub. 92, pp. 334, 341 (1892).

1740. ——. Haighmoor Colliery, 2½ miles N.byE. of Ipswich Rail. Stn. (Main line). *Co.* Stanley (*ante*). *Analyses: See* Coal Table, Nos. 286, 287, and 288. *Ref.* G.S.Q. Pubs. 125, p. 59 (1897), and 147, p. 21 (1899), and A.R., p. 139 (1908).

1740A.——. Mafeking Colliery, Bundamba Coal Area, 21 miles (by rail) W.S.W. of Brisbane. *Par.* Bundamba; *Co.* Stanley (*ante*).

1740B.——. ½-mile S.E. of Mafeking Colliery, Bundamba Coal Area (*ante*). *Analysis: See* Coal Table, Nos. 261A, 261B.

1741. ——. New Aberdare Colliery (Top and Bottom Seam), Bundamba Coal Area (*ante*). *Analysis: See* Coal Table, Nos. 262 and 263. *Ref.* A.R., p. 157 (1908).

1741A.——. New Chum Colliery, Bundamba Coal Area (*ante*).

1742. ——. New Colliery, nr. Tivoli, 2 miles N. of Ipswich, Bundamba Coal Area (*ante*). *Analysis: See* Coal Table, No. 289. *Ref.* G.S.Q. Pub. 92, pp. 337, 341 (1892).

1742A.——. New West Moreton Colliery, Bundamba Coal Area (*ante*). *Ref.* O.R.

1743. ——. Oakwood Colliery, 6 miles S.S.E. of Bundamba Rail. Stn. (Main line), 27 miles (by rail and road) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Analyses: See* Coal Table, Nos. 266-270. *Ref.* A.R., pp. 95, 114 (1907).

1743A.——. Old West Moreton Colliery, Bundamba Coal Area, 21 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley. *Ref.* O.R.

1743B.——. Purga Colliery, about 6 miles S. of Ipswich. *Co.* Stanley (*ante*).

1744. ——. Rhondda Colliery, Bundamba Coal Area, 21 miles W.S.W. of Brisbane *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 272. *Ref.* G.S.Q. Pub. 147, p. 20 (1899), and O.R.

1744A.——. Rose Hill Colliery, Bundamba Coal Area, 21 miles W.S.W. of Brisbane (*ante*).

1745. ——. Rocky Crossing, Brisbane R., 2 miles N.W. of Tivoli Mine, 4 miles N. of Ipswich. *Co.* Stanley; *Dist.* Moreton. *Analysis: See* Coal Table, No. 290. *Ref.* G.S.Q. Pub. 92, pp. 337, 341 (1892).

1746. ——. Rothwell Haig Colliery (Stafford's), 2 miles N. of Ipswich, North Ipswich Coal Area. *Co.* Stanley (*ante*). *Analyses: See* Coal Table, Nos. 291-298. *Ref.* A.R., pp. 40, 42, 43 (1906), p. 139 (1908).

1747. ——. Swanbank Colliery, 3¼ miles S. of Bundamba Rail. Stn. (Main line), and 24¼ miles (by rail and road) S.W.byS. of Brisbane, Bundamba Coal Area. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 273. *Ref.* G.S.Q. Pubs. 125 (1897), and 147, p. 21 (1899).

1747A.——. Tantivy Colliery, North Ipswich Coal Area, 24 miles W.S.W. of Brisbane. *Par.* Chuwar; *Co.* Stanley (*ante*).

1748. ——. Aberdare Seam, Thomas's Colliery, 1½ mile S. of Bundamba Rail. Stn. (Main line). *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 251. *Ref.* G.S.Q. Pub. 92, pp. 335, 341 (1892).

1749. ——. Old Aberdare Seam, Thomas's Colliery (*ante*). *Analysis: See* Coal Table, No. 271. *Ref.* G.S.Q. Pub. 92, pp. 335-341 (1892), and 147, p. 20 (1899).

1750. ——. Thompson's New Colliery, Por. 174, Par. of Goodna, 1 mile S. of Bundamba Rail. Stn. *Co.* Stanley; *Dist.* Moreton. *Analysis: See* Coal Table, No. 274. *Ref.* G.S.Q. Pub. 92, pp. 335, 341 (1892).

1751. ——. Tivoli Colliery, 2 miles N. of Ipswich. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 299. *Ref.* G.S.Q. Pub. 92, pp. 336, 341 (1892).

1752. ——. Blond and Wright's Seam, Tivoli Colliery (*ante*). *Analysis: See* Coal Table, No. 283. *Ref.* G.S.Q. Pub. 92, pp. 336, 341 (1892).

1753. ——. Tivoli Seam (No. 2), Tivoli Colliery (*ante*). *Analysis: See* Coal Table, No. 443. *Ref.* "Queensland," by Daintree, 1873, p. 78.

1754. ——. Aberdare Seam, Walker's Fairbank Colliery, N. of Bundamba Rail. Stn. *Co.* Stanley; *Dist.* Moreton. *Analyses: See* Coal Table, Nos. 252, 253. *Ref.* A.R., 1905, p. 5.

1755. Coal. Garden Seam, Waterstown Colliery, Tivoli, 1¼ mile N.byE. of Ipswich. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 285. *Ref.* G.S.Q. Pub. 92, p. 344 (1892).

1756. ——. Waterstown Colliery, Tivoli (*ante*). *Analysis: See* Coal Table, No. 300. *Ref.* G.S.Q. Pub. 125, p. 60 (1897), and 147, p. 21 (1899).

1757. ——. New Chum Seam, Whitwood Colliery, 1 mile S.W. of Dinmore Rail. Stn., 20 miles (by rail and road) W. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 265. *Ref.* G.S.Q. Pubs. 125, p. 59 (1897), and 147, p. 21 (1899).

1758. ——. Bishop's Seam, Wright's Bishop Colliery, 2 miles N. of Ipswich Rail. Stn. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 281. *Ref.* G.S.Q. Pubs. 125, p. 60 (1897), and 147, p. 2 (1899).

1759. ——. Tivoli Seam, Wright's New Tivoli Colliery, 2 miles N. of Ipswich Rail. Stn. (*ante*). *Analysis: See* Coal Table, No. 301. *Ref.* G.S.Q. Pub. 147, p. 21 (1899).

1760. ——. Belmont, 8 miles E. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 143, p. 10 (1899).

1760A.——. In bore. Fountain's Selection, about ½-mile N. of Burpengary Creek, nr. Burpengary Rail. Stn., 26 miles N. of Brisbane (North Coast line). *Co.* Stanley (*ante*). *Ref.* B.D.

1761. ——. Capalaba, 10 mles E. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 36. *Ref.* A.R., p. 140 (1908).

1762. ——. (Struck at depth of 790 ft.), Racecourse Bore, Eagle Farm, 6 miles (by rail) N. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 41. *Ref.* G.S.Q. Pub. 58, p. 2 (1890).

1763. ——. Downman's Sel. 68 [63], 1½ mile N. of Logan Village Rail. Stn. (Beaudesert br. line), and 28 miles (by rail and road) S.E. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 4. *Ref.* G.S.Q. Pub. 36, p. 3 (1887), and 225, p. 15 (1910).

1764. ——. Shailer's Sel. 261 [407], Slack's Cr., trib. of Logan R., 4½ miles N.E. of Loganlea Rail. Stn. (South Coast line), 23½ miles (by rail and road) S.E. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 6. *Ref.* G.S.Q. Pub. 36, p. 2 (1887).

1765. ——. Lyon's Shaft, Por. 158, Par. of Moggill, 12 miles S.W. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 261. *Ref.* G.S.Q. Pub. 92, pp. 334, 341 (1892).

1766. ——. Sels. 14 and 15 (Williams's), opposite Wolston Cr., 2 miles N.W. of Wolston Rail. Stn. (on Main line), 14 miles (by rail and road) W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 63, p. 1 (1890).

1767. ——. Moreton Is. (Cape Moreton), 40 miles N.E. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 37. *Ref.* A.R., 1908, p. 143.

1768. ——. Moreton Is. (*ante*). *Analysis: See* Coal Table, No. 39. *Ref.* A.R., p. 145 (1908).

1769. ——. In 18-in. seam, and in other smaller seams, in shaft, Sel. 318, Par. Bulimba, nr. Broawater Bridge, Mt. Gravatt, 4½ miles S.E. of Brisbane Rail. Stn. *Co.* Stanley; *Dist.* Moreton.

1770. ——. Murphy's Seam, Kedron Brook, about 5 miles N. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 38. *Ref.* G.S.Q. Pub. 92, p. 341 (1892), and A.R., 1908, p. 160.

1771. ——. Nundah Coal Mine, 1 mile S.W. of Nundah Rail. Stn., 6 miles (by rail and road) N. of Brisbane. *Co.* Stanley (*ante*). *Analyses: See* Coal Table, Nos. 40 and 40A. *Ref.* G.S.Q. Pub. 104, p. 4 (1896), and 225, p. 35 (1910), and A.R., p. 160 (1908).

1771A.—— (14-in. seam). Baynes Bros.' Works, Queensport, Hemmant, 5 miles N.E. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 40B. *Ref.* G.S.Q. Pub. 225, p. 30 (1910). *Note.*—Fifteen to twenty feet of coal, coaly shale, and clay occurs on the bank of the Brisbane River about this locality, the coal seams being generally very small, and alternating with bands of the shale and clay.

1771B.—— Australian Meat Export Cutting, Queensport (*ante*). *Analysis: See* Coal Table No. 40C. *Ref.* A.R., p. 192 (1913).

1772. ——. Por. 122, Par. Redland, 4 miles N.E. of Kingston Rail. Stn. (South Coast line). *Co.* Stanley (*ante*). *Ref.* O.M.

1773. —— (in several small seams). *Assoc.with* Fireclay. *Loc.* Kelly's Balmoral Brick Works, Bulimba Cr., Par. of Tingalpa, 8 miles E.byN. of Brisbane. *Co.* Stanley (*ante*). *Analyses: See* Coal Table, Nos. 31, 32, 33. *Ref.* A.R., 1907, pp. 109 and 119, and O.M.

1773A.——. Por. 342, Tingalpa Cr., Tingalpa, 10½ miles E.S.E. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Coal Table, No. 41A. *Ref.* G.S.Q. Pub. 225, p. 27 (1910).

1773B.——. Por. 357, Tingalpa, about 1¼ mile S.E. of Mt. Petrie, 9 miles E.S.E. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 225, p. 26 (1910).

1774. ——. In quarry, on Por. 50, par. of Tingalpa, 1½ mile S.W. of Manly Rail. Stn. (Cleveland line). *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pubs. 108, p. 4 (1896), and 225, p. 28 (1910).

1774A.——. Seam said to be on Ebenezer Thorn's Sel., on Mt. Mona, nr. Mt. Cotton, 14 miles S.E.byE. of Brisbane. *Co.* Stanley (*ante*).

1775. ——. Por. 58, Par. of Yeerongpilly, 1 mile S.E. of Kuraby Rail. Stn. (South Coast line), 14 miles (by rail and road) S. of Brisbane. *Co.* Stanley (*ante*). *Ref.* O.M.

1776. ——. Por. 266, Scrubby Cr., Par. of Yeerongpilly, 1 mile W. of Kingston Rail. Stn. (South Coast line), 18 miles (by rail and road) S. of Brisbane. *Co.* Stanley (*ante*). *Ref.* O.M.

1777. ——. Por. 393, Par. Yeerongpilly (*ante*). *Ref.* O.M.

1777A.——. Por. 25, Tygum, W. of Logan R., Par. of Mackenzie, about ½-mile W. of Waterford Rail. Stn. (Beaudesert Br. line). *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 225, p. 14 (1910).

1777B.——. Pors. 68 (?) [63], 64, and 67, Mona Park, Par. of Mackenzie, 1 mile N.W.byW. of Buccan Rail. Stn. (Beaudesert line). *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 225, pp. 15-20 (1910).

1777C.——. Pors. 252, 227A, 257, Scrubby Cr., Par. of Mackenzie, 1 to 1½ mile S.W.byW. of Kingston Rail. Stn. (South Coast line). *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 225, p. 13 (1910).

1777D.——. Dennis Sel., Por. 121, 4 miles N. of Loganlea Rail. Stn. (South Coast line). *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pubs. 36, p. 2 (1887), and 225, p. 11 (1910).

1777E.——. In bore. Sel. 2 (W. H. Couldery), 3 miles E. of Alberton, 8 miles E. of Bethania Junction (South Coast line). *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 51, p. 2 (1889).

1778. —— (cannel). Beaudesert, 47 miles (by rail) S.byE. of Brisbane. *Co.* Ward (*ante*). *Analysis: See* Coal Table, No. 2. *Ref.* A.R., p. 13 (1905).

1779. ——. Brayford's Sel. 137, Par. of Logan, 1½ mile N. of Beaudesert Rail. Stn., 48½ miles (by rail and road) S.byE. of Brisbane. *Co.* Ward (*ante*). *Analysis: See* Coal Table, No. 3. *Ref.* G.S.Q. Pubs. 36, p. 3 (1887), and 51, p. 4 (1889).

1779A.——. Gould's Sel., Por. (137), Par. of Logan, 1½ mile N. of Beaudesert (*ante*). *Analysis: See* Coal Table, No. 4B. *Ref.* G.S.Q. Pub. 225, p. 41 (1910). Bore put down in 1912. *See* list *under* Coal Bores for notes.

1779B.——. Stanfield's Sel., Por. (98), Par. of Beaudesert, about 1½ mile E.byN. of Beaudesert, 48½ miles (by rail and road) S.byE. of Brisbane. *Co.* Ward (*ante*). *Analysis: See* Coal Table, No. 6A. *Ref.* G.S.Q. Pub. 225, p. 42 (1910).

1780. ——. Rafter's Sel. (63), Bromelton, 5 miles W. of Beaudesert Rail. Stn., 52 miles (by rail and road) S.byE. of Brisbane. *Co.* Ward (*ante*). *Analysis: See* Coal Table, No. 5. *Ref.* G.S.Q. Pubs. 49, p. 8 (1889), and 51, p. 4 (1889), and G.S.M.

1781. ——. Water's Sel. (120), 1½ mile N. of Beaudesert, 48½ miles (by rail and road) S.byE. of Brisbane. *Co.* Ward (*ante*). *Analysis: See* Coal Table, No. 7. *Ref.* G.S.Q. Pubs. 49, p. 8, and 51, p. 4 (1889). Bore put down in 1912. *See* list *under* Coal Bores for notes.

1782. ——. Timber Reserve, ½-mile N. of Buccan Rail. Stn., 26 miles (by rail) S. of Brisbane (Beaudesert line). *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 225, pp. 20-22 (1910), and O.M.

1782A.——. Crown Lands Reserve (200), nr. corner and S.E. corner of Por. 26V., Par of Palen, about 29 miles S.W. of Beaudesert, 76 miles (by rail and road) from Brisbane. *Co.* Ward (*ante*). *Analyses: See* Coal Tables, Nos. 3A and 3B. *Ref.* G.S.Q. Pub. 225, p. 46 (1910).

1782B. Coal. Egan's Sel., Por. 37, Par. of Palen, Palen Cr., about 25 miles S.W. of Beaudesert. *Co.* Ward (*ante*). *Analysis: See* Coal Table, 4A. *Ref.* G.S.Q. Pub. 225, p. 45 (1910).

1782C.——. Widgee Cr., Steinhardt's Sel., Pors. 2T and 9T, Par. of Telemon, about 21 miles S.S.E. of Beaudesert, 68 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Analyses: See* Coal Table, Nos. 9A and 9B. *Ref.* G.S.Q. Pub. 225, p. 48 (1910).

1782D.——. Por. 34, in br. of Back Cr., about 14 miles S.S.W. of Innesplain Rail. Stn. (Beaudesert line). *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 225, p. 34 (1910).

1782E.——. Por. 53v. Par. of Kerry, Kerry Cr., about $7\frac{1}{2}$ miles S.E. of Beaudesert Rail. Stn. *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 225, p. 48 (1910).

1782F.——. Por. 261, Par. of Moffat, close to Buccan Rail. Stn., 26 miles S.E.byS. of Brisbane. *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 225, p. 22 (1910).

1783. ——. Ball's Sel. (71), Flagstone Cr., 2 miles S.W. of Tambourine, about 12 miles S. of Logan Village Rail. Stn. (Beaudesert Br. line). *Co.* Ward (*ante*). *Analysis: See* Coal Table, No. 1. *Ref.* G.S.Q. Pub. 51, p. 3 (1889).

1784. —— (8-in. seam). Por. 7, Par. Logan, at Gleneagle Rail. Stn., Beaudesert br. line, 44 miles S. of Brisbane. *Co.* Ward (*ante*). *Ref.* O.M.

1785. ——. Por. 60, Logan R., Par. of Mackenzie. $1\frac{1}{2}$ mile N.W. of Logan Village Rail. Stn. (Beaudesert Br. line). *Co.* Ward (*ante*). *Ref.* O.M.

1786. ——. Por. (388), Logan Village, Par. of Boyd-Moffatt, 27 miles (by rail) S.S.E. of Brisbane (Beaudesert Br. line). *Co.* Ward (*ante*). *Ref.* O.M.

1787. ——. Watt's Sel. (11), 3 miles S.E. of Logan Village Rail. Stn., 30 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Analyses: See* Coal Table, Nos. 8, 9. (*Ref.* G.S.Q. Pubs. 36 (1881), and 51, pp. 2, 3 (1889).

1788. —— (reported). Pors. 23 and 24, Par. of Mundoolan, 9 miles S. of Logan Village Rail. Stn. (Beaudesert line), 36 miles (by rail and road) S.byE. of Brisbane. *Co.* Ward (*ante*). *Ref.* O.M.

1789. ——. In small bands, in brown and yellow sandstone. Por. 66, Par. of Tambournie, 6 miles S. of Logan Village Rail. Stn. (Beaudesert br. line). *Co.* Ward (*ante*). *Ref.* O.M.

1790. ——. Por. 11, Par. of Wickham, $3\frac{1}{2}$ miles S.E. of Logan Village Rail. Stn. (Beaudesert br. line), and 30 miles (road and rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* O.M.

1790A.——. In well, Johnson's Sel. (20v.) *Par.* Palen; *Co.* Ward (*ante*).; 5 miles S.W. Rathdowney Station, Beaudesert tramline. *See* analyses *under* Table of Coal Analyses, Nos. 4C, 4D, p. 262. Sample 4C: 1 ft. thick; depth, 24 ft. Sample 4D: 3 ft. thick; depth, 27 ft.; 2 ft. below 3C. Coal bands also occur at 40 ft., ash contents being 29 per cent. *Ref.* B.D.

1791. ——. Boyne R., 55 miles S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* O.M.

1791A.——. Littabella Cr., 3 miles N. of Yandaran, 20 miles N. of Bundaberg. *Co.* Flinders; *Dist.* Port Curtis. *Ref.* Q.G.M.J., p. 448 (1911).

1792. —— (lignite). As small seam, in well, Duncan's Sel., nr. Lilymere Lagoon, Jamie Hill, Alton Downs, nr. Rockhampton. *Co.* Livingstone (*ante*). *Ref.* B.D.

1793. ——. In well in Jenkins's Paddock, Alton Downs (*ante*). *Ref.* B.D.

1794. ——. Friend's Sel. (26v), Bushley Rail. Stn. (Central line), 25 miles (by rail S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Analyses: See* Coal Table, Nos. 351, 352. *Ref.* G.S.Q. Pub. 131, p. 11 (1898), and 175, p. 8 (1902).

1795. —— (lignite). In Tertiary (?) clays with myrtaceous plant. Agricultural Reserve, Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.M.

1796. —— (lignite). Native Cat Cr., 6 miles W. of Stanwell Rail. Stn (Central line), 22 miles (by rail and road) W.S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

1797. —— (lignite). Petersen's Sel. (2098, Quarry Cr., $3\frac{1}{4}$ miles S.byE. of Stanwell Rail. Stn. (Central line), 19 miles (by rail and road) S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 10 (1898).

1798. ——. Brussel's Cr., Broadsound, 96 miles N.W.byN. of Rockhampton. *Co.* Murchison (*ante*). *Ref.* A.R.D.M., p. 552 (1896).

1799. ——. Cattle Cr., Broadsound, about 11 miles N. of St. Lawrence. *Co.* Murchison (*ante*). *Ref.* O.M.

1800. ——. Styx R. Coalfield, 12 miles S.E. of St. Lawrence, 52 miles N.W.byN. of Rockhampton. *Co.* Murchison (*ante*). *Analyses: See* Coal Table, Nos. 355-369. Ref. G.S.Q. Pubs. 84, pp. 3-8 (1892), 92, p. 308 (1892), and 194, p. 11 (1904).

1801. —— (lignite). Shaft, Valentine Cr., at junction of Waterpark Cr., 44 miles N.N.E. of Rockhampton. *Co.* Palmerston; *Dist.* Port Curtis. *Analysis: See* Coal Table, No. 404. *Ref.* G.S.Q. Pub. 174, pp. 1-3 (1902).

1802. ——. Waterpark Cr. (outcrop), 44 miles N.N.E. of Rockhampton (*ante*). *Analysis: See* Coal Table, No. 405. *Ref.* G.S.Q. Pub. 174, p. 3 (1902).

1803. ——. Callide Cr. Coalfield, 52 miles S.W.byW. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. *Analyses: See* Coal Table, Nos. 68-72, 414. *Ref.* G.S.Q. Pubs. 80, p. 3 (1891), 148, p. 12 (1900). *Note.*—Recent developments (1912) show that one seam of coal exists which is 54 feet thick.

1804. —— (inferior). S. of South Peak, Moonmera Rail. Stn. (Mt. Morgan line), 20 miles S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 195, p. 16 (1904).

1804A.——. About 30 miles S.W. of Charleville. *Co.* Burrandilla; *Dist.* **Warrego.** *Ref.* A.R., p. 376 (1911).

1804B.—— (lignite). Band at 200 ft., in Cretaceous beds. *Loc.* Charlotte Plains (Cunnamulla) Artesian Bore, No. 206, about 30 miles E. of Cunnamulla Rail. Stn. (Western line). *Co.* Noorama; *Dist.* Warrego. *Ref.* A.R.H.E. (1911).

1805. ——. Queensland Co.'s Burrum Colliery, Howard, 14 miles (by rail) N. of Maryborough, Burrum Coalfield. *Co.* Cook; *Dist.* **Wide Bay.** *Analyses: See* Coal Table, Nos. 56-59, 64, 413. *Ref.* G.S.Q. Pubs. 24, p. 11 (1886), 147, p. 21 (1889), 125, p. 59 (1897), and 170, pp. 13-15, 19 (1901), and A.R., 1910, p. 236.

1806. ——. Clyde Colliery (Beaufort Seam), Beaufort Shaft, Howard (*ante*). *Analysis: See* Coal Table, No. 51. *Ref.* G.S.Q. Pubs. 24, p. 11 (1886), 170, p. 16 (1901).

1806A.——. Dundee (Dudley) Colliery, Howard (*ante*). *Analyses: See* Coal Table, Nos. 53A and 53B. *Ref.* A.R., p. 207 (1910).

1806B.——. Glenesk Colliery, Howard (*ante*). *Ref.* O.R.

1807. ——. Howard Colliery, Howard (*ante*). *Analysis: See* Coal Table, No. 54. *Ref.* G.S.Q. Pub. 147, p. 21 (1899).

1808. ——. New River Bank Colliery, Howard (*ante*). *Analysis: See* Coal Table, No. 55. *Ref.* G.S.Q. Pubs. 125, p. 59 (1897), and 147, p. 21 (1899).

1808A.——. Riverbank Colliery, 1¼ miles S.E. of Howard Rail. Stn., Burrum Coalfield. *Co.* Cook; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 170, p. 14 (1901).

1809. ——. Burrum, Lapham, and Torbanlea Seams, Torbanlea Colliery, Howard (*ante*). *Analyses: See* Coal Table, Nos. 52, 53, 60-63. *Ref.* G.S.Q. Pub. 24, p. 11 (1886), 31, p. 57 (1886), 125, p. 60 (1897), 147, p. 21 (1899), 170, p. 15 (1901).

1810. ——. Agnes Vale, Broom's Cr., trib. of Isis R., 25 miles N.N.W. of Maryborough, Burrum Coalfield. *Co.* Cook; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 24 (1886).

1811. ——. Cherwell Cr., trib. of Isis R., 4 miles N.W. of Howard, 18 miles (by rail and road) N.W. of Maryborough, Burrum Coalfield (*ante*). *Ref.* G.S.Q. Pub. 24 (1886).

1812. ——. Gregory R., 2 miles S.W.byW. of Goodwood Rail. Stn. (North Coast line), 16 miles N.W.byW. of Howard, Burrum Coalfield (*ante*). *Ref.* G.S.Q. Pub. 24, p. 9 (1886).

1813. ——. Isis R., about 28 miles W.N.W. of Maryborough, Burrum Coalfield (*ante*). *Ref.* G.S.Q. Pub. 24 (1886).

1814. ——. Isis Scrub, Bundaberg Road, nr. Childers Rail. Stn. (Isis br. line), 40 miles (by rail) N.W.byW. of Maryborough, Burrum Coalfield (*ante*). *Ref.* G.S.Q. Pub. 24, p. 10 (1886).

1815. ——. Oaky Cr., trib. of Isis R., about 28 miles N.W.byW. of Maryborough, Burrum Coalfield (*ante*). *Ref.* G.S.Q. Pub. 24, p. 9 (1886).

1816. —— (inferior). Pine Cr., Burnett R., 3 miles above Bingera Rail. Stn. (Mt. Perry line), 14 miles (by rail and road) W. of Bundaberg. *Co.* Cook; *Dist.* Wide Bay. *Analysis: See* Coal Table, No. 48. *Ref.* G.S.Q. Pubs. 92, p. 307 (1892), 150, p. 10 (1900).

1817. ——. Miva Seam, Sel. 1767, 2½ miles up Munna Cr., 2½ miles N. of Miva Rail. Stn. (Kilkivan line), and 28 miles (by rail and road) N.W. of Gympie (North Coast line). *Co.* Lennox; *Dist.* Wide Bay. *Analyses: See* Coal Table, Nos. 390-392. *Ref.* G.S.Q. Pubs. 59, p. 2 (1890), and 92, p. 305 (1892).

1818. ——. Por. (1966), Par. of Miva, 26 miles N.W. of Gympie. *Co.* Lennox (*ante*). *Ref.* O.M.

1818A. Coal (18 in. seam). Crew's Prospecting Area, 2 miles W. of Aldershot Rail. Stn. *Co.* Lennox (*ante*). *Ref.* B.D.

1818B.—— (one-foot seam). *Loc.* Templeton's No. 2 Shaft, Templeton's Sel., about 1½ miles W. from Aldershot Rail. Stn. *Co.* Lennox (*ante*). *Ref.* B.D.

1819. ——. Redbank Cr., 3 miles W. of Tiaro Rail. Stn. (North Coast line). *Co.* Lennox (*ante*). *Analysis: See* Coal Table, No. 393. *Ref.* G.S.Q. Pub. 59, p. 5 (1890).

1820. ——. Jones's Sel. (1311), Tanyalba Cr., about 6 miles W.byS. of Gundiah Rail. Stn. (North Coast line). *Co.* Lennox (*ante*). *Analyses: See* Coal Table, Nos. 386-390. *Ref.* G.S.Q. Pub. 59, p. 3 (1890).

1821. ——. Thomas's Colliery, Tanyalba Cr. (*ante*). *Analyses: See* Coal Table, Nos. 395-398. *Ref.* A.R., pp. 51, 75 (1906).

1822. —— (anthracitic). Bull's Sel. (1357), nr. Gunalda, 17 miles S.byE. of Tiaro Rail. Stn. (North Coast line). *Co.* March; *Dist.* Wide Bay. *Analysis: See* Coal Table, No. 384. *Ref.* G.S.Q. Pub. 59, p. 2 (1890).

1822A.—— (bituminous). In 5-ft. seam, dipping 1-2½. Thomas Shaft, *Sel.* 1180, ½-mile east of Gunalda Rail. Stn. (*ante*). *Ref.* B.D.

1823. ——. Gunalda Run, Gunalda Rail. Stn. (North Coast line), 18 miles (by rail) N. of Gympie. *Co.* March (*ante*). *Analysis: See* Coal Table, No. 385. *Ref.* A.R., p. 25 (1905).

1824. —— (anthracite). *Assoc.with* Iron Pyrites, in slate, in crosscut at 1,300-ft. level, in 6-in. seam. *Loc.* Australasian Shaft, Australasian E.M. Co.'s Mine, Gympie, 106 miles (by rail) N.W. of Brisbane (North Coast line). *Co.* March (*ante*). *Ref.* B.D.

1825. ——. Nr. Lake Weyba, Laguna Bay, about 2 miles N. of Noosa. *Co.* March; *Dist.* Wide Bay (*ante*). *Ref.* G.S.Q. Pub. 49, p. 6 (1889).

1826. —— (anthracitic). *Assoc.with* Graphite, in sandstone and shale. No. 2 Workings, Bull's Mine, Mt. Bopple, 3 miles S.E. of Netherby Rail. Stn. (North Coast line). *Co.* March (*ante*). *Analysis: See* Coal Table, No. 383. *Ref.* G.S.Q. Pub. 203, pp. 5, 8, 10 (1906).

1827. ——. Eastern Slope, Mt. Bopple (*ante*). *Ref.* G.S.Q. Pub. 59, p. 4 (1890).

1828. ——. Nr. Canning's Sel. (1176), 11 miles N.W. of Noosa, 5 miles N.E. of Cooran Rail. Stn. (North Coast line). *Co.* March; *Dist.* Wide Bay. *Analyses: See* Coal Table, Nos. 341, 342. *Ref.* G.S.Q. Pub. 64, pp. 1, 2 (1890), and O.M.

1829. ——. Sorensen's Sel. (1737), Mary R., 9 miles S.S.W. of Tiaro Rail. Stn. (North Coast line). *Co.* March (*ante*). *Analysis: See* Coal Table, No. 394. *Ref.* G.S.Q. Pub. 59, p. 4 (1890).

1829A.——. In 1-ft. seam, 9 miles from Tewantin, and 3 or 4 miles from Pomona Rail. Stn. (North Coast line), on Tewantin-Gympie Road, about 25 miles (by rail and road) S.E. of Gympie. *Co.* March (*ante*). *Ref.* B.D.

1830. ——. On Tinana Cr., 12 miles S. of Maryborough. *Co.* March (*ante*). *Ref.* O.M.

1830A.——. Bellert's Shaft, 3 miles N.E. of Torbanlea, 14 miles (by rail and road) N.W. of Maryborough. *Co.* March (*ante*). *Analysis: See* Coal Table, No. 51A. *Ref.* A.R., p. 214 (1910).

1830B.——. Colton (Maryborough-Burrum Colliery Co.'s) Bores, 2 miles N.W. of Colton Rail. San. (Maryborough-Bundaberg line). *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 170, pp. 18, 25 (1901).

1830C.——. Saltwater Bores, Aldershot, 2 miles (by rail) N.W.byN. of Maryborough. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 170, pp. 18, 25 (1901).

1831. —— (lignite). Daru Is., mouth of Oriom (Tate) R., 270 miles W. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 32 (1892).

1832. —— (lignite). Fly R., 304 miles W.byN. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 85, p. 32 (1892).

1833. —— (lignite). Strickland R., trib. of Fly R., 410 miles W.N.W. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 185, p. 32 (1892).

1834. —— (fragments and boulders). Abukiru Is., Purari R., 176 miles N.W.byW. of Port Moresby, Brit. New Guinea. *Analysis: See* Coal Table, No. 46. *Ref.* A.R., B.N.G., 1893-4, p. 93.

1834A.——. Two seams in Cretaceous beds. Depth (?). Malula Artesian Bore, No. 321. *Co.* (?); *Dist.* (?). *Ref.* A.R.H.E. (1911).

Coal Analyses—Tables, pages 262-284.

COAL—GENERAL TABLE OF PROXIMATE ANALYSES.

Coal Table No.	POSITION.		PROXIMATE ANALYSES, ETC.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names.*	Analyst.
			%	%	%	%	%		* *See* note at end.			*See*		
	Aberdare Coll.	..	*See* No. 249.											
	ALBERT AND LOGAN—													
1	Ball's Sel. 71, Flagstone Cr., about 5 miles N.E. of Beaudesert	*Ward*, Moreton	8.1	38.7	50.7	2.5	..	7,615	13,707	..	Bright, non-caking. Ash, white	1783	G.S.Q.P. 51, p. 3 (1889)	—
2	Beaudesert	,, ,,	3.9	33.6	30.7	31.8	..	5,694	10,249	..	..	1778	A.R., p. 13 (1905)	J.B.H.
3	Brayford's Sel. 137, about 1½ miles north of Beaudesert	,, ,,	8.0	34.0	33.0	25.2	..	5,919	10,654	1.4	Resembles cannel; burns freely. Ash, white	1779	G.S.Q.P. 51, p. 4 (1889)	J.F.
3A	Crown Lands (Res. No. 200), near corner of Por. 26V, Par. of Palen, S.W. of Beaudesert	,, ,,	5.1	30.1	40.8	24.0	..	6,184	11,131	..	Non-caking; non-coking. Ash, light-pink	1782A	G.S.Q P. 225, p. 46 (1910)	J.B.H.
3B	Ditto S.E. corner	,, ,,	3.7	31.9	34.4	30.0	..	5,833	10,499	..	Cakes, but does not coke. Ash, light-pink	1782A	G.S.Q.P. 225, p. 46 (1910)	J.B.H.
4	Downman's Sel. 68 ? [63], 1½ miles N. of Logan Village	*Stanley* ,,	22.5		58.5	19.0	..	..	..	..	Fair for steam purposes, household use, and smith's work	1763	G.S.Q.P. 36, p. 3 (1887) G.S.Q.P. 225, p. 15 (1910)	A.C.G.
4A	Egan's Sel. (Por. 37, Par. of Palen), Palen Cr., S.W. of Beaudesert	*Ward* ,,	4.4	35.4	45.7	14.5	..	6,910	12,438	..	Cakes and partially cokes. Ash, light-pink	1782B	G.S.Q.P. 225, p. 45 (1910)	J.B.H.
4B	Gould's Sel. (Por. 137, Par. of Logan), same locality as No. 3 (Brayford)	,, ,,	5.0	40.1	40.7	14.2	..	6,926	12,466	..	Cakes and partially cokes. Ash, white	1779A	G.S.Q.P. 225, p. 41 (1910)	J.B.H.
4C	Rathdowney, S.W. of Beaudesert. No. 1 Sample	,, ,,	6.2	32.5	43.9	17·3	..	6,664	11,995	..	..	1790A	A.R. 181 (1913)	J.B.H.
4D	Ditto No. 2 Sample	,, ,,	5.5	29.6	44.8	19.9	..	6,611	11,899	..	..	1790A	A.R. 181 (1913)	J.B.H.
5	Rafter's Sel., 5 miles west of Beaudesert	,, ,,	4.3	13.5	71.1	11.1	..	7,549	13,588	..	Ash, dark-grey	1780	G.S.Q.P. 51, p. 4 (1889)	—
6	Shailer's Sel. 261 ? [407], in gully, Slack's Cr.	*Stanley* ,,	1.0	24.1	50.3	24.3	..	6,509	11,716	..	Coke, brittle and compact. Ash, light-grey	1764	G.S.Q.P. 36, p. 2 (1887) G.S.Q.P. 225, p. 11 (1910)	—
6A	Stansfield's Sel. (Por. 98, Par. of Beaudesert), about 1½ miles E. by N. of Beaudesert	*Ward* ,,	15.8	20.4	13.6	50.2	..	3,148	5,666	..	Non-caking; non-coking. Ash, grey	1779B	G.S.Q.P. 225, p. 42 (1910)	J.B.H.
	Steinhardt's Sel. (Por. 9T, Par. of Telemon)	..	*See* No. 9A.											
7	Waters' Sel. 120, 1½ miles north of Beaudesert (shaft)	,, ,,	44.0		47.3	8.7	..	..	..	1.4	Resembles cannel, and burns freely. Ash, white	1781	G.S.Q.P. 51, p. 4 (1889)	W.H.R.
8	Watts' Sel. 11 (shaft), 3 miles S.E. of Logan Village	,, ,,	1.3	19.7	47.3	31.6	..	5,824	10,483	..	Coke, hard and compact. Ash, slightly reddish-grey	1787	G.S.Q.P. 51, p. 3 (1889)	—
9	Watts' Sel. 11, 100 yards N.W. of shaft	,, ,,	2.2	22.8	51.0	24.0	..	6,436	11,584	..	Coal cakes well on coking. Ash, light-grey	1787	G.S.Q.P. 51, p. 2 (1889)	—

9A	Widgee Cr., Steinhardt's Sel. (Por. 9T, Par. of Telemon), about 21 miles S.E. of Beaudesert	,, ,,	2.3	39.4	49.3	9.0	..	7,563	13,613	..	Cokes slightly. Ash, light-pink	1782C	G.S.Q.P. 225, p. 47 (1910)	J.B.H.
9B	Widgee Cr., opposite Steinhardt's (in Por. 2T, Par. of Telemon), about 21 miles S.E. of Beaudesert	,, ,,	4.1	36.7	42.2	17.0	..	6,742	12,135	..	Cakes, but does not coke ..	1782C	G.S.Q.P. 225, p. 48 (1910)	J.B.H.
12	Allora—Por. 73V, Par. of Glengallan, about 4 miles W.S.W. of Allora	*Merivale*, D. Downs	5.3	36.2	39.1	19.4	..	6,444	11,599	..	Cakes, but does not coke. Ash, reddish-grey	1636A	A.R., p. 275 (1910)	J.B.H.
	Balgowan, near Oakey	..	*See* Nos. 343 and 344.											
	Beaudesert	..	,, Nos. 1, 2, 3, 4B, 5, 6A, and 7.											
	Bee Cr., W. of Mackay	..	,, No. 334.											
	Bishop's Coll., Ipswich Coalfield	..	,, No. 281.											
	Blackfellow's Cr., Near Gatton	..	,, No. 235.											
	Black Rock Cr., N. of Mackay	..	,, Nos. 326, 327, 328, 328A, B, C, and D inclus.											
	Blackstone, Ipswich Coalfield	..	,, No. 250, &c.											
	Blair Athol, Near Clermont	..	,, Nos. 78, 79, 81 to 85 inclus.											
	Blantyre, near Warreah	..	,, No. 402A, 402B.											
	Bluff Coll., C. Q. Railway	..	,, Nos. 110 to 122 inclus., also Nos. 416 to 419 inclus.											
	Bogside Coll., Ipswich Coalfield	..	,, No. 254											
	Bonnie Dundee Coll., Ipswich Coalfield ..	..	,, No. 255.											
	BOWEN RIVER—													
16	Byerwin Stn. (well), 75 miles S.W. by S. of Bowen	*Drake*, Kennedy Sth.	1.5	22.4	61.1	14.8	0.4	7,219	12,994	..	Exp. evap. power, 12.5 lb. ..	1656	G.S.Q.P. 181, p. 21 (1903)	J.B.H.
17	Daintree Seam, coked (upper), 43 in.	,, ,,	2.1	8.0	51.8	38.1	..	5,261	9,469	1.8	..	1650	G.S.Q.P. 4, p. 39 (1879)	—
18	Daintree Seam, 7 ft. (bottom) ..	,, ,,	2.5	13.1	57.1	27.2	..	6,356	11,440	1.5	..	1650	G.S.Q.P. 4, p. 38 (1879)	—
19	Daintree Seam, 7 ft. (top) ..	,, ,,	2.4	15.7	57.4	24.4	..	6,248	11,246	1.4	..	1650	G.S.Q.P. 4, p. 38 (1879)	—
20	Daintree Seam, 6 in. seam ..	,, ,,	2.9	10.0	49.6	37.5	..	5,342	9,615	1.5	..	1650	G.S.Q.P. 4, p. 38 (1879)	—
21	Daintree Seam, 3 in. band ..	,, ,,	1.9	20.0	63.6	14.4	..	7,183	12,929	1.4	Ash, white	1650	G.S.Q.P. 4, p. 38 (1879)	—
22	Garrick Seam, Pelican Cr. ..	,, ,,	1.2	35.2	46.6	16.9	..	6,965	12,537	1.4	A bright, hard coke. Ash, grey	1652	G.S.Q.P. 4, p. 37 (1879)	—
23	Garrick Seam, Pelican Cr. (nodulous pt.)	,, ,,	1.0	19.9	67.6	11.5	..	7,499	13,498	1.4	Spongy coke; very hard ..	1652	G.S.Q.P. 4, p. 37 (1879)	—
24	Garrick Seam, Pelican Cr. (No. 1 Bore)	,, ,,	1.1	20.2	61.5	17.0	..	7,032	12,657	1.5	Fair furnace coal, although ash is high	1653	A.R.D.M., 1885, p. 56 ..	R.L.J.
25	Kennedy Seam, Pelican Cr. ..	,, ,,	1.1	41.8	42.8	14.2	..	7,041	12,673	1.4	Bright, hard coke. Ash, light-brown	1654	G.S.Q.P. 4, p. 37 (1879)	—
26	Macarthur Cr. Seam	,, ,,	28.8		38.6	32.6	..	..	..	1.6	..	1651	G.S.Q.P. 4, p. 38 (1879)	A.C.G.
27	Pelican Cr., 1 ft. 9 in. seam ..	,, ,,	2.2	23.6	59.1	15.0	..	7,176	12,916	1.3	Supposed to be Kennedy Seam	1655	G.S.Q.P. 31, p. 47 (1886)	R.L.J.
28	Bowen Riv. Co., Pelican Cr., 5 ft.	,, ,,	0.8	24.1	62.1	12.8	..	7,471	13,447	..	Garrick Seam	1655A	A.R., p. 181 (1913)	J.B.H.
	Box Flat Colliery, Ipswich Coalfield ..	..	*See* No. 256.											
	Braeside, Ipswich Coalfield	..	,, No. 257, 258.											
	Bringalily Creek, near Inglewood ..	..	,, No. 247.											
	BRISBANE AND ENVIRONS—													
31	Bulimba Cr., Tingalpa, about 8 miles E. by N. of Brisbane (Kelly's Brickyards)	*Stanley*, Moreton	4.8	16.2	24.7	54.3	..	3,633	6,539	..	Non-coking. Ash, white ..	1773	A.R., p. 109 (1907)	J.B.H.
32	Ditto	,, ,,	2.8	21.2	36.3	39.7	..	5,078	9,140	..	..	1773	A.R., p. 119 (1907)	J.B.H.
33	Ditto (P. C. Smith's shaft at Kelly's)	,, ,,	1.7	17.7	30.2	50.4	..	4,231	7,615	..	..	1773	A.R., p. 191 (1909)	J.B.H.
34	Caloundra Head (north end) ..	*Canning* ,,	1.0	18.0	41.9	39.1	..	5,214	9,385	..	..	1713	A.R., p. 142 (1908)	J.B.H.
35	Ditto (south end) ..	,, ,,	6.8	22.2	67.5	3.5	..	7,721	13,897	..	..	1713	A.R., p. 142 (1908)	J.B.H.

COAL.—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

Coal Table No.	POSITION.		PROXIMATE ANALYSES, ETC.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units.*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names.*	Analyst.
			%	%	%	%	%							
36	Capalaba, about 10 miles E. of Brisbane	*Stanley*, Moreton	7.8	21.3	50.9	20.0	..	6,278	11,300	..	..	*See* 1761	A.R., p. 140 (1908)	J.B.H.
37	Cape Moreton (*See also* No. 39) ..	,, ,,	3.1	10.4	84.2	2.3	..	8,214	14,785	..	..	1767	A.R., p. 143 (1908)	J.B.H.
38	Kedron Brook (Murphy's Seam)	,, ,,	16.0		33.6	50.4	..	..	..	..	Cokes. Carbon in coke =30.0% ; ash in coke = 70.0%.	1770	G.S.Q.P. 92, p. 341 (1892)	A.C.G.
39	Moreton Island (*See also* No. 37)	,, ,,	3.1	32.9	58.6	5.4	..	7,901	14,221	..	..	1768	A.R., p. 145 (1908)	J.B.H.
40	Nundah Colliery (Gardner) ..	,, ,,	1.6	23.9	51.7	22.8	..	6,603	11,885	..	Cokes well	1771	A.R., p. 160 (1908) G.S.Q.P. 108, p. 4 (1896)	J.B.H.
40A	Nundah Colliery (Gardner) ..	,, ,,	1.6	23.7	55.2	19.5	..	6,868	12,362	..	Ash, light-grey. Coke, very friable	1771	G.S.Q.P. 225, p. 35 (1910)	J.B.H.
40B	Queensport (Baynes Bros.' works)	,, ,,	9.2	21.3	43.5	26.0	..	5,675	10,215	..	14-in. seam	1771A	G.S.Q.P. 225, p. 30 (1910)	J.B.H.
40C	,, (A.M.E. Cutting) ..	,, ,,	1.3	25.3	61.6	11.8	..	7,550	13,590	..	Good hard coke	1771B	A.R., p. 192 (1913)	J.B.H.
41	Racecourse, Eagle Farm bore ..	,, ,,	0.6	35.8	39.5	24.1	..	6,441	11,593	1.5	Cokes. Coal struck at depth of 790 ft.	1762	G.S.Q.P. 58, p. 2 (1890)	R.M.
41A	Tingalpa Cr., Tingalpa	,, ,,	8.4	20.7	33.0	37.8	..	4,759	8,566	..	Non-coking. Ash, light-brown	1773A	G.S.Q.P. 225, p. 27 (1910)	J.B.H.
42	Torway Cr. (north of Caloundra Head)	*Canning* ,,	2.1	12.4	36.3	49.2	..	4,570	8,226	..	..	1714	A.R., p. 143 (1908)	J.B.H.
	British New Guinea—													
46	Abukiru Is., Purari R.	..	17.2	36.8	39.5	6.5	..	6,531	11,755	..	Mean analysis of ten samples ..	1834	A.R.B.N.G., p. 93 (1893-4)	J.B.H.
	Broadsound, Styx Coalfield	..	*See* Nos. 355–363.											
	Bulimba Creek, near Brisbane	..	,, Nos. 31–33.											
	Bundaberg (near)—													
48	3 miles above Bingera, at Pine Cr.	*Cook*, Wide Bay	34.3		57.5	6.2	..	..	..	..	Cokes. Carbon in coke = 90% ; ash in coke = 9.7%	1816	G.S.Q.P. 92, p. 307 (1892)	A.C.G.
49	Littabella Cr., 3 miles N. of Yandaran, 20 miles N.W. of Bundaberg	*Flinders*, Port Curtis	14.6	26.5	43.3	15.6	..	6,178	11,120	..	..	1791A	Q.G.M.J., p. 448 (1911)	J.B.H.
	Bundamba, Ipswich Coalfield	..	*See* No. 249, &c.											
	BURRUM—													
51	Beaufort's Shaft Seam, Howard..	*Cook*, Wide Bay	31.5		64.0	4.5	..	..	..		..	1806	G.S.Q.P. 24, p. 11 (1886)	A.C.G.
51A	Bellert's Shaft, 3 miles N.E. of Torbanlea	*March*, ,,	3.1	27.1	60.5	9.2	..	7,640	13,753	..	Good hard coke. Ash, light-red. Truck sample	1830A	A.R., p. 183 (1913)	J.B.H.

52	Burrum Seam (Torbanlea Coll.) ..	*Cook*	,,	2.7	28.0	65.5	3.2	0.4	8,138	14,648	1.3	Cokes. Ash, reddish	1809	G.S.Q.P. 24, p. 11 (1886)	W.H.R.
53	Burrum Seam, Torbanlea ..	,,	,,	29.8		62.2	8.0	..	..	..	..	..	1809	G.S.Q.P. 24, p. 11 (1886)	A.C.G.
53A	Dundee (Dudley) Mine, Howard Seam at 75 ft.	,,	,,	2.5	25.0	68.2	4.3	..	8,058	14,504	..	Exp. evap. power = 14.43 ..	1806A	A.R., p. 207 (1910)	J.B.H.
53B	Ditto	,,	,,	2.6	24.9	68.5	4.0	..	8,072	14,529	..	Exp. evap. power = 14.48 ..	1806A	A.R., p. 207 (1910)	J.B.H.
54	Howard	,,	,,	1.4	28.1	65.4	5.0	1.3	8,140	14,652	..	Bulk sample supplied by owners	1807	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
55	New Riverbank Mine, Torbanlea	,,	,,	1.1	27.5	69.2	2.1	0.7	8,389	15,100	..	Bulk samples supplied by proprs. Ash of coke = 3.1%	1808	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
56	Q'land Coll. Co., Howard—Large	,,	,,	1.4	31.0	65.2	2.2	0.6	8,258	14,864	..	Cokes. Exp. evap. power, 14.0	1805	G.S.Q.P. 170, p. 19 (1901)	J.H.
57	Ditto .. .. .. Small	,,	,,	1.5	28.8	62.6	7.0	0.5	7,981	14,365	..	Cokes. Exp. evap. power, 13.5	1805	G.S.Q.P. 170, p. 19 (1901)	J.H.
57A	Ditto .. .. No. 5 Pit	,,	,,	2.3	24.2	66.1	7.4	..	7,807	14,052	..	Taken from bulk sample of 300 lb. Cokes. Ash, light-red. (*See* Ult. Analysis No. 413.)	1805	A.R., p. 236 (1910)	J.B.H.
58	Ditto .. Whitley's Shaft	,,	,,	26.6		68.4	5.0	..	..	..	..	..	1805	G.S.Q.P. 24, p. 11 (1886)	A.C.G.
59	Ditto	,,	,,	2.5	30.3	64.3	2.5	0.3	8,118	14,612	1.2	Cokes. Ash, grey	1805	G.S.Q.P. 24, p. 11 (1886)	W.H.R.
60	Torbanlea (Lapham) Seam, Torbanlea Coll. Bottom	,,	,,	2.0	28.0	61.6	8.0	0.4	7,820	14,076	1.3	Cokes. Ash, grey	1809	G.S.Q.P. 24, p. 11 (1886)	W.H.R.
61	Ditto .. .. .. Top	,,	,,	2.2	29.1	66.5	2.1	..	8,329	14,992	1.2	Cokes. Ash, grey	1809	G.S.Q.P. 24, p. 11 (1886)	W.H.R.
62	Torbanlea Seam	,,	,,	0.1	27.0	70.0	2.0	0.9	8,405	15,129	..	..	1809	G.S.Q.P. 31, p. 57 (1886)	D.M.
63	Ditto	,,	,,	3.2	25.2	58.4	13.1	1.7	7,279	13,102	..	Samples supplied by owners. Cokes	1809	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
64	Wright's Burrum	,,	,,	1.4	26.2	70.7	1.5	.7	8,382	15,087	..	Bulk sample supplied by proprs. Cokes	1805	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
	Bushley, near Stanwell	..		*See* Nos. 351 and 352.											
	Byerwin Station, near Bowen	..		,, No. 16.											
	Caledonian Mine. Ipswich Coalfield ..	..		,, No. 306.											
	CALLIDE CREEK—														
68	Shaft No. 1 Bottom por. of seam	*Raglan,*	Port Curtis	8.4	24.5	57.3	9.5	0.2	7,119	12,814	..	Non-coking. Ash, white and gritty	1803	G.S.Q.P. 80, p. 3 (1891)	W.A.D.
69	Ditto Top portion of seam	,,	,,	8.3	28.8	41.7	20.8	0.3	6,278	11,300	..	Non-coking. Ash, white and gritty	1803	G.S.Q.P. 80, p. 3 (1891)	W.A.D.
70	Shaft No. 1	,,	,,	9.5	26.3	59.8	4.2	..	7,503	13,505	..	Non-coking. Ash, white ..	1803	G.S.Q.P. 80, p. 3 (1891)	J.C.N.
71	Shaft No. 2	,,	,,	9.1	26.7	51.2	12.6	0.2	6,842	12,315	..	Non-coking. Ash, white and gritty	1803	G.S.Q.P. 80, p. 3 (1891)	W.A.D.
72	Shaft No. 3	,,	,,	10.0	23.6	54.2	12.0	0.1	6,777	12,198	..	Non-coking. Ash, white and gritty.	1803	G.S.Q.P. 80, p. 3 (1891)	W.A.D.
	Ultimate Analysis	..		*See* No. 414.											
	Caloundra, N. of Bribie Island	..		*See* Nos., 34, 35 and 42.											
75	Cambooya (6 miles W.S.W. of)— .. .. at Hodgson's Cr.	*Aubigny,*	D. Downs	44.7		42.6	12.7	..	..	..	1.3	Hard, compact, and withstands weathering. Partly cokes. Carbon in coke=77.0%; ash in coke=23.0%.	1624	G.S.Q.P. 92, pp. 339 and 341 (1892)	A.C.G.
	Canning Creek, near Inglewood	..		*See* No. 247.											
	Capalaba, 10 miles east of Brisbane ..	..		,, No. 36.											
	Capella, Clermont Railway Line ..	..		,, No. 80.											
	Cape Moreton, Moreton Island	..		,, Nos. 37 and 39.											
	Charleville—														
76	About 30 miles S.W. of	*Burrandilla,*	Warrego	2·7	40·1	42.1	15.1	..	7,040	12,672	..	Exp. evap. power = 11.0 ..	1804A	A.R., p. 376 (1911)	J.B.H.

COAL.—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

Coal Table No.	POSITION.		PROXIMATE ANALYSES, ETC.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names.*	Analyst.
			%	%	%	%	%					*See*		
CLERMONT—														
77	Bastet (M.L. 36)	*Clermont,* Leichhardt	5.2	27.4	62.0	5.2	..	7,793	14,027	..	Non-coking. Ash, white	1665	G.S.Q.P. 148, p. 12 (1900)	J.B.H
78	Blair Athol (lower seam)	,, ,,	5.0	27.0	61.0	7.0	Trace	7,671	13,807	1.2 about)	Mean analysis	1666	G.S.Q.P. 148, p. 11 (1900)	—
79	Blair Athol (top seam)	,, ,,	5.6	32.4	57.5	4.5	Trace	7,764	13,975	1.2 (about)	Mean of all analyses of top seam. Non-coking	1666	G.S.Q.P. 148, p. 10 (1900)	—
80	Capella (17v)	*Talbot* ,,	0.8	57.5	32.3	9.2	3.8	..	..	..	A gas coal	1697	G.S.Q.P. 107, p. 5 (1895)	J.B.H.
81	Eldorado	*Clermont* ,,	5.4	34.1	55.7	4.2	Trace	7,779	14,002	1.3	Coke friable. Ash, white	1667	G.S.Q.P. 148, p. 12 (1900)	J.B.H.
82	Hope (best coal)	,, ,,	5.6	30.6	59.7	4.0	Trace	7,772	13,989	..	Non-caking. Ash, white	1669	G.S.Q.P. 148, p. 12 (1900)	J.B.H.
83	Hope (inferior coal)	,, ,,	4.3	21.4	53.0	21.1	Trace	6,459	11,626	..	Non-caking. Ash, white	1669	G.S.Q.P. 148, p. 12 (1900)	J.B.H.
84	Imbell	,, ,,	5.7	32.3	57.1	4.8	Trace	7,722	13,899	1.3	Slightly caking. Ash, white	1670	G.S.Q.P. 148, p. 12 (1900)	J.B.H.
85	Mercer's Lease (32)	,, ,,	4.5	26.2	59.1	10.0	Trace	7,436	13,384	1.4	Slightly caking. Ash, white	1671	G.S.Q.P. 148, p. 12 (1900)	J.B.H.
86	Quarry Hill	,, ,,	4.0	36.0	30.9	25.0	4.5	5,758	10,364	..	..	1674	G.S.Q.P. 148, p. 12 (1900)	J.B.H.
CLIFTON—														
90	Clifton Coll.—Lower seam	*Aubigny,* D. Downs		47.0	37.0	16.0	..	..	..	1.3	..	1620	G.S.Q.P. 92, p. 339 (1892)	A.C.G.
91	Ditto Upper seam	,, ,,		47.6	42.2	10.2	..	..	..	1.2 to 1.3	Cokes. Carbon in coke=80.5%; ash in coke=19.5%	1620	G.S.Q.P. 92, pp. 339-341 (1892)	A.C.G.
	Coalbrook	..	*See* No. 233 (Warreah), Nos. 402 A, B (Blantyre)											
	Columba Mines, C.Q. Railway	..	,, Nos. 126 to 132.											
	Comet River, C.Q. Railway	..	,, No. 136.											
COOKTOWN—														
95	Near Welcome Cr., 3 miles S. of 41-mile peg, Cooktown R. Line	*Banks,* Cook	8.2	30.4	42.3	19.0	..	6,335	11,403	1.8	..	1610	G.S.Q.P. 35, p. 13 (1887) G.S.Q.P. 70, p. 5 (1891)	R.L.J.
96	Ditto, 6 miles S.W. of 31-mile peg	,, ,,	1.2	21.7	62.7	14.4	..	7,280	13,104	..	..	1609	A.R., p. 156 (1908)	J.B.H.
97	Ditto, ½ mile N.W. of 37½-mile peg	,, ,,	1.6	17.9	34.0	46.5	..	4,561	8,209	..	Lower seam	1608	G.S.Q.P. 180, p. 26 (1902)	—
98	Ditto	,, ,,	0.8	18.3	41.8	39.0	..	5,236	9,424	..	Upper seam	1608	G.S.Q.P. 180, p. 26 (1902)	—
99	Ditto	,, ,,	1.3	19.0	43.0	36.3	..	5,404	9,727	..	Sample from drive—50 ft. from mouth	1608	G.S.Q.P. 180, p. 26 (1902)	—
100	Ditto	,, ,,	1.0	20.2	42.4	36.3	..	5,475	9,855	..	Sample from coal waiting shipment	1608	G.S.Q.P. 180, p. 26 (1902)	—
101	Deighton R., 12 miles S. of Welcome R. Stn., Cooktown Line	,, ,,	2.4	22.0	65.7	9.9	..	7,554	13,597	..	Exp. evap. power, 12.67	1603	A.R., p. 145 (1908)	J.B.H
102	Ditto	,, ,,	2.2	24.9	61.3	11.6	..	7,485	13,473	..	..	1603	A.R., p. 156 (1908)	J.B.H,

102A	Ditto	,, ,,	0.7	22.5	65.7	11.1	..	7,604	13,687	..	Cakes. Ash, red. (*See* Ultimate Analysis No. 415.	1603	G.S.Q.P. 222, p. 12	(1910)	J.B.H.
102B	Ditto	,, ,,	6.6	29.0	56.1	8.3	..	7,472	13,449	..	Non-coking. Ash, dark-red. (*See* Ult. Analysis No. 415A.)	1603	A.R., p. 175	(1909)	J.B.H.
103	Guppy's Tableland Seam.. ..	,, ,,	2.3	15.2	72.8	9.6	..	7,453	13,415	1.6	Ash, yellow	1605	G.S.Q.P. 70, p. 3	(1895)	A.G.M.
104	Puckley's Cr. (4 miles up valley)	,, ,,	7.1	21.0	35.3	36.5	..	4,976	8,956	1.5	..	1607	G.S.Q.P. 70, p. 5	(1891)	R.L.J.
105	Puckley's Cr., 9-in seam ..	,, ,,	0.3	30.1	39.3	30.2	..	6,062	10,911	1.5	Ash, grey	1607	G.S.Q.P. 70, p. 4	(1891)	A.G.M.
106	38-mile (Christie) .. .. .. *See also under* Little River	,, ,,	0.9	19.7	66.8	12.4	0.3	7,414	13,345	..	..	1602	G.S.Q.P. 94, p. 2 and 106, p. 1	(1893) (1895)	R.M.
Cooran, near Gympie		..	*See* Nos. 341 and 342.												
Cooyar Creek, near Mooretown		..	,, No. 339.												
Cooyar, parish of		..	,, No. 410.												
Crow's Nest, near Toowoomba		..	,, No. 380.												
Daintree Seam, Bowen River Coalfield ..		..	,, Nos. 17–21.												
Dalby (8 miles N. of)—															
107	Por. 290, Par. Jimbour	*Aubigny*, D. Downs	5.2	39.9	42.3	12.6	..	7,038	12,668	..	Exp. evap. power, 12.48 ..	1622A	Q.G.M.J., p. 388	(1910)	J.B.H.
108	Ditto	,, ,,	5.6	39.3	41.4	13.7	..	6,911	12,439	..	Cakes, but does not coke. Ash, white with trace of red	1622A	A.R., p. 235	(1910)	J.B.H.
Dawson River Coy.'s Mine		..	*See* Nos. 139 to 158, inclusive; *also* No. 422.												
Dawson–Mackenzie—															
110	Bluff Colliery (top of lower seam, 3 ft. 6 in.)	*Humboldt*, Leichhardt	1.0	10.1	78.1	10.7	..	7,678	13,820	..	Ash, brown. Non-coking. ..	168	Q.G.M.J., p. 16 and L.B. 8, p. 570	(1905) (1894)	J.B.H.
111	Ditto (5-in. splint lower seam)	,, ,,	1.6	9.4	59.7	29.3	..	6,087	10,956	..	Ash, brown. Non-coking. ..	1685	Q.G.M.J., p. 16 and L.B. 8, p. 570	(1905) (1894)	J.B.H.
112	Ditto (bottom of lower seam, 3 ft. 6 in.)	,, ,,	1.2	12.3	75.6	10.8	..	7,760	13,968	..	Cakes, and partly cokes. Ash, brown	1685	Q.G.M.J., p. 16 and L.B. 8, p. 570	(1905) (1894)	J.B.H.
113	Ditto (lower seam)	,, ,,	0.8	11.5	78.9	8.8	..	7,925	14,265	..	Ash, dark-red	1685	A.R., p. 24	(1905)	J.B.H.
114	Ditto (lower seam at 70 ft.)	,, ,,	1.9	12.0	74.9	11.1	..	7,664	13,795	..		1685	Q.G.M.J., p. 16	(1905)	—
115	Ditto (splint in lower seam)	,, ,,	1.4	9.1	66.3	23.2	..	6,586	11,854	..	Sample by B.D.	1685	L.B. 8, p. 470	(1894)	J.B.H.
116	Ditto (top seam)	,, ,,	0.8	10.7	76.0	12.5	..	7,585	13,653	..	Ash, red	1685	A.R., p. 24	(1905)	J.B.H.
117	Ditto	,, ,,	1.4	8.4	79.4	10.8	..	7,563	13,613	..	Harbour Board test. (*See* Ult. Analysis No. 416)	1685	A.R., p. 6	(1905)	J.B.H.
118	Ditto	,, ,,	1.	.6	79.8	9.3	..	7,751	13,951	..	Harbour Board test. (*See* Ult. Analysis No. 417)	1685	A.R., p. 6	(1905)	J.B.H.
119	Ditto	,, ,,	1.3	7.5	77.1	14.1	..	7,258	13,064	..	Harbour Board test. (*See* Ult. Analysis No. 418)	1685	A.R., p. 6	(1905)	J.B.H.
120	Ditto	,, ,,	1.3	8.5	77.7	12.5	..	7,437	13,386	..	Harbour Board test. (*See* Ult. Analysis No. 419)	1685	A.R., p. 6	(1905)	J.B.H.
121	Ditto	,, ,,	1.1	10.6	75.2	13.1	..	7,506	13,510	..	Franco-Brit. Exhib. sample ..	1685	A.R., p. 132	(1907)	J.B.H.
122	Ditto	,, ,,	1.2	9.8	73.6	15.4	..	7,272	13,089	..	ditto ..	1685	A.R., p. 132	(1907)	J.B.H.
126	Columba Mine, nr. Bluff, C.Q.R. (bottom seam, 4 ft.)	,, ,,	0.8	11.1	78.2	9.9	..	7,816	14,068	..	Cokes. Ash, red	1687	A.R., p. 21	(1905)	J.B.H.
127	Ditto (bright coal)	,, ,,	1.5	12.6	79.7	6.1	..	8,133	14,639	..	Non-coking. Ash, light brown	1687	O.R.		J.B.H.
128	Ditto (dull coal)	,, ,,	2.2	9.8	75.2	12.7	..	7,402	13,323	..	Non-coking. Ash, red-brown..	1687	O.R.		J.B.H.
129	Ditto (4 ft. top of seam) ..	,, ,,	1.1	9.5	80.6	8.8	..	7,803	14,045	..	Non-coking. Ash, red.. ..	1687	A.R., p. 21	(1905)	J.B.H.
130	Ditto	,, ,,	1.2	8.8	77.2	12.8	..	7,435	13,383	..	Non-coking. Ash, red. Sample exposed for 7 months	1687	A.R., p. 21	(1905)	J.B.H.
131	Ditto	,, ,,	2.7	10.7	72.6	13.9	..	7,307	13,152	..	Non-coking	1687	Q.G.M.J., p. 330	(1904)	J.B.H.
132	Ditto	,, ,,	1.8	11.3	71.1	15.8	..	7,263	13,073		Non-coking. Exp. evap. power, 12.27	1687	A.R., p. 49	(1906)	J.B.H.
136	Comet R.	,, ,,	25.0		65.3	9.7	..	..	..	..	Cokes	1688	Q.M.		—

COAL.—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

Coal Table No.	POSITION.		PROXIMATE ANALYSIS, ETC.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names.*	Analyst.
			%	%	%	%	%							
139	Dawson R. Coy.'s Mine	*Ferguson,* Leichhardt	2.8	14.1	74.2	8.7	..	7,880	14,184	..	Coke friable. Ash, grey, non-clinking	*See* 1691	G.S.Q.P. 155, p. 6 (1901)	J.B.H.
140	Ditto (A) seam ..	" "	1.5	7.3	86.2	5.0	..	7,974	14,353	..	No. 1 Bore—265 ft.	1691	Q.G.M.J. (1905), p. 15, and Plan 3	J.B.H.
141	Ditto	" "	1.4	8.2	83.7	6.7	Nil	7,887	14,196	..	No. 1 Bore—278 ft.	1691	Inf. supplied by Secty. ..	J.B.H.
142	Ditto (B) seam ..	" "	1.4	9.2	84.1	4.8	..	8,050	14,490	..	No. 1 Bore—279 ft.	1691	Q.G.M.J. (1905), p. 15, and Plan 3	—
143	Ditto (C) seam ..	" "	2.0	8.5	79.2	10.2	..	7,559	13,606	..	No. 1 Bore—410 ft.; core sample	1691	Q.G.M.J. (1905), p. 15, and Plan 3	—
144	Ditto (D) seam ..	" "	2.0	7.8	80.8	9.4	..	7,599	13,678	..	No. 1 Bore—422 ft.; core sample	1691	Q.G.M.J. (1905), p. 15, and Plan 3	—
145	Ditto (E) seam ..	" "	1.8	7.3	84.0	6.8	..	7,795	14,031	..	No. 1 Bore—429 ft.; core sample	1691	Q.G.M.J. (1905), p. 15, and Plan 3	J.B.H
146	Ditto (F) seam ..	" "	1.7	8.4	81.7	8.1	..	7,750	13,950	..	No. 2 Bore—90 ft.; core sample	1691	Q.G.M.J. (1905), p. 15, and Plan 3	J.B.H.
147	Ditto	" "	1.8	7.0	84.1	7.1	Nil	7,764	13,975	..	No. 2 Bore—108 ft.	1691	Inf. supplied by Secty. ..	J.B.H.
148	Ditto (G) seam ..	" "	1.5	7.2	74.0	17.2	..	6,967	12,540	..	No. 2 Bore—137 ft.; core sample	1691	Q.G.M.J. (1905), p. 15, and Plan 3	J.B.H.
149	Ditto (H) seam ..	*Kimberley,* Leichhardt	1.3	7.5	85.9	5.3	..	7,975	14,355	..	No. 4 Bore—256 ft.; sample from 10-ft. coal core	1691	Q.G.M.J. (1905), p. 15, and Plan 3	J.B.H.
150	Ditto (I) seam ..	*Ferguson,* Leichhardt	1.7	9.2	84.2	4.8	0.8	8,058	14,504	..	No. 1 Shaft; bulk sample, 17 ft. from surface	1691	Q.G.M.J. (1905), p. 15, and Plan 3	Adm.
151	Ditto (J) seam ..	" "	1.0	8.1	77.5	13.3	..	7,369	13,264	..	No. 4 Shaft; taken 48 ft. from the surface	1691	Q.G.M.J. (1905), p. 15, and Plan 3	J.B.H.
152	Ditto	*Kimberley,* Leichhardt	1.7	6.6	86.0	5.7	..	7,867	14,160	..	No. 4 Bore—265 ft. (*See* Ult. Analysis No. 422)	1691	Q.G.M.J. (1905), p. 654, and Plan 3	J.B.H.
153	Ditto	*Ferguson,* Leichhardt	2.4	11.6	78.4	7.5	..	7,897	14,214	..	Mean result of several samples taken from bulk. Clean seam, 6 ft. 6 in. thick	1691	G.S.Q.P. 216, p. 31 (1907)	—
154	Ditto	" "	0.9	10.2	78.4	10.2	..	7,715	13,887	..	..	1691	A.R., p. 90 (1907)	J.B.H.
155	Ditto	" "	1.2	8.7	85.2	4.9	0.65	8,074	14,533	1·3	Sample supplied by Company ..	1691	L.B. 8, p. 194 (1903)	J.B.H.
156	Shaft No. 5 (Govt. Prosp. Shaft), near No. 4 Bore	*Kimberley,* Leichhardt	1.5	10.4	74.0	14.1	..	7,383	13,289	..	(Slack)	1691	A.R., p. 159 (1908)	J.B.H.
157	Ditto	" "	1.6	9.7	77.9	10.8	..	7,609	13,696	..	(Nuts)	1691	A.R., p. 159 (1908)	J.B.H.
158	Ditto	" "	1.5	9.6	78.7	10.2	..	7,662	13,791	..	(Unscreened)	1691	A.R., p. 159 (1908)	J.B.H.

	Government Bores— Dawson River, E. side—														
159	Bore 35, 1st seam, top sect. ..	*Ferguson*, Leichhardt	1.1	7.6	80.6	10.7	..	7,556	13,600	..	Non-coking. Ash, brown. Exp. evap. power = 12.74	1691A	A.R., p. 358	(1911)	J.B.H.
159A	Ditto bot. sect. ..	,, ,,	1.1	8.8	84.3	5.8	..	8,014	14,425	..	Non-coking. Ash, brown. Exp. evap. power = 13.53	1691A	A.R., p. 358	(1911)	J.B.H.
159B	Bore 36 (M.L. 36), 2nd seam ..	,, ,,	1.4	8.5	82.5	7.6	..	7,828	13,990	..	Non-coking. Ash, pinkish-brown Exp. evap. power = 13.17	1691A	A.R., p. 358	(1911)	J.B.H.
159C	Bore 38 (M.L. 36), 1st seam ..	,, ,,	1.1	8.7	82.6	7.6	..	7,862	14,151	..	Non-coking. Ash, pinkish-brown. Exp. evap. power = 13.18	1691A	A.R., p. 359	(1911)	J.B.H.
159D	Ditto 2nd seam ..	,, ,,	1.1	7.8	80.4	10.7	..	7,566	13,618	..	Non-coking. Ash, pinkish-brown. Exp. evap. power = 12.81	1691A 1691A	A.R., p. 359	(1911)	J.B.H.
159E	Bore 39 (M.L. 36), 1st seam ..	,, ,,	1.1	8.8	81.7	8.4	..	7,802	14,043	..	Non-coking. Ash, brown. Exp. evap. power = 12.86	1691A	A.R., p. 359	(1911)	J.B.H.
159F	Ditto 2nd seam ..	,, ,,	1.3	8.1	81.9	8.7	..	7,727	13,908	..	Non-coking. Ash, yellowish-brown. Exp. evap. power = 13.06	1691A	A.R., p. 360	(1911)	J.B.H.
159G	Bore 40 (M.L. 36), 1st seam ..	,, ,,	1.7	7.9	78.9	11.5	..	7,457	13,422	..	Non-coking. Ash, brown. Exp. evap. power = 12.23	1691A	A.R., p. 360	(1911)	J.B.H.
159H	Ditto 2nd seam ..	,, ,,	1.1	7.4	74.7	16.8	..	7,050	12,690	..	Non-coking. Ash, whitish-grey. Exp. evap. power = 11.91	1691A	A.R., p. 360	(1911)	J.B.H.
160	Ditto 3rd seam ..	,, ,,	1.2	6.1	80.8	11.9	..	7,378	13,280	..	Non-coking. Ash, grey. Exp. evap. power = 12.6	1691A	A.R., p. 361	(1911)	J.B.H.
160A	Bore 41 (M.L. 37), 1st seam ..	,, ,,	0.9	5.6	82.6	10.9	..	7,459	13,426	..	Non-coking. Ash, yellowish-brown. Exp. evap. power = 12.83	1691A 1691A	A.R., p. 361	(1911)	J.B.H.
160B	Ditto 2nd seam ..	,, ,,	1.3	8.5	78.6	11.6	..	7,510	13,518	..	Non-coking. Ash, brown. Exp. evap. power = 12.84	1691A	A.R., p. 361	(1911)	J.B.H.
160C	Bore 42 (M.L. 36), 1st seam ..	,, ,,	0.6	7.0	86.0	6.4	..	7,919	14,254	..	Non-coking. Ash, grey. Exp. evap. power = 13.38	1691A	A.R., p. 362	(1911)	J.B.H.
160D	Bore 43 (M.L. 36), 1st seam ..	,, ,,	0.8	9.3	79.4	10.5	..	7,680	13,824	..	Non-coking. Ash, brown. Exp. evap. power = 13.19	1691A	A.R., p. 362	(1911)	J.B.H.
160E	Bore 44 (M.L. 36), 1st seam ..	,, ,,	1.2	7.2	83.7	7.9	..	7,757	13,962	..	Non-coking. Ash, pinkish-brown. Exp. evap. power = 13.07	1691A	A.R., p. 362	(1911)	J.B.H.
160F	Ditto 2nd seam ..	,, ,,	1.0	6.9	82.2	9.9	..	7,596	13,672	..	Non-coking. Ash, grey. Exp. evap. power = 12.85	1691A	A.R., p. 363	(1911)	J.B.H.
160G	Bore 46 (M.L. 37)	,, ,,	1.4	8.0	78.4	12.2	..	7,429	13,372	..	Non-coking. Ash, grey. Exp. evap. power = 12.46	1691A	A.R., p. 376	(1911)	J.B.H.
160H	Bore 47 (M.L. 37)	,, ,,	0.9	8.5	82.0	8.6	..	7,788	14,018	..	Non-coking. Ash, brown. Exp. evap. power = 13.18	1691A	A.R., p. 376	(1911)	J.B.H.
161	Bore 48 (M.L. 37)	,, ,,	1.1	8.2	81.4	9.3	..	7,700	13,860	..	Non-coking. Ash, pinkish brown. Exp. evap. power = 12.94	1691A	A.R., p. 377	(1911)	J.B.H.
161A	Bore 49 (M.L. 37)	,, ,,	1.0	8.7	81.5	8.8	..	7,773	13,991	..	Non-coking. Ash, light-brown. Exp. evap. power = 13.04	1691A	A.R., p. 377	(1911)	J.B.H.
161B	Bore 25 (C.P.A. 393), 1st seam ..	,, ,,	1.1	8.3	80.1	10.5	..	7,607	13,692	..	Non-coking. Ash, yellow-brown. Exp. evap. power = 12.74	1691A	A.R., p. 378	(1911)	J.B.H.
161C	Ditto top of 2nd seam	,, ,,	1.1	8.6	75.6	14.7	..	7,279	13,102	..	Non-coking. Ash, yellow-brown. Exp. ev p. power = 12.14	1691A	A.R., p. 379	(1911)	J.B.H.

COAL—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

Coal Table No.	POSITION.		PROXIMATE ANALYSIS, ETC.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units.*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under "Abbreviations" for Titles and Names.*	Analyst.
			%	%	%	%	%					*See*		
	Government Bores—*continued.*													
	Dawson River, E. side—													
161D	Bore 25 (C.P.A. 393), bot. of 2nd seam	*Ferguson,* Leichhardt	1.0	8.1	81.2	9.7	..	7,670	13,806	..	Non-coking. Ash, pinkish-brown. Exp. evap. power = 12.8	1691A	A.R., p. 379 (1911)	J.B.H.
	Dawson R., W. side—													
161E	Bore 17 (C.P.A. 302)	*Kimberley,* Leichhardt	1.5	7.7	75.6	15.2	..	7,162	12,891	..	Non-coking. Ash, yellowish grey. Exp. evap. power = 11.94	1691B	A.R., p. 377 (1911)	J.B.H.
161F	Bore 18 (C.P.A. 302)	,, ,,	1.5	8.3	77.9	12.3	..	7,427	13,368	..	Non-coking. Ash, pinkish brown. Exp. evap. power = 12.59	1691B	A.R., p. 377 (1911)	J.B.H.
161G	Bore 20 (C.P.A. 393)	,, ,,	1.8	8.5	72.9	16.8	..	7,046	12,682	..	Non-coking. Ash, pinkish brown. Exp. evap. power = 11.71	1691B	A.R., p. 378 (1911)	J.B.H.
162	Bore 21 (C.P.A. 394)	,, ,,	1.4	9.0	68.9	20.7	..	6,785	12,213	..	Non-coking. Ash, grey. Exp. evap. power = 11.03	1691B	A.R., p. 378 (1911)	J.B.H.
162A	Bore 22 (C.P.A. 394)	,, ,,	1.2	7.8	65.8	25.2	..	6,376	11,476	..	Non-coking. Ash, grey. Exp. evap. power = 10.8	1691B	A.R., p. 378 (1911)	J.B.H.
162B	Bore 26 (C.P.A. 302)	,, ,,	1.0	9.7	76.7	12.6	..	7,512	13,521	..	Non-coking. Ash, grey. Exp. evap. power = 12.41	1691B	A.R , p. 379 (1911)	J.B.H.
162C	Bore 27 (C.P.A. 393)	,, ,,	1.0	9.1	71.3	18.6	..	6,993	12,587	..	Non-coking. Ash, yellow-brown. Exp. evap. power = 11.53	1691B	A.R., p. 379 (1911)	J.B.H.
62D	Bore 28 (W. of M.L. 37), 1st seam	,, ,,	1.4	7.5	67.5	23.6	..	6,476	11,656	..	Non-coking. Ash, greyish-white. Exp. evap. power = 10.9	1691B	A.R., p. 380 (1911)	J.B.H.
62E	Ditto 2nd seam	,, ,,	1.2	8.6	81.1	9.1	..	7,727	13,908	..	Non-coking. Ash, pinkish-grey. Exp. evap. power = 11.94	1691B	A.R., p. 380 (1911)	J.B.H.
63	Ditto 3rd seam	,, ,,	1.2	8.4	70.7	19.7	..	6,854	12,337	..	Non-coking. Ash, pinkish-grey. Exp. evap. power = 11.37	1691B	A.R., p. 380 (1911)	J.B.H.
164	Bore 29 (C.P.A. 393)	,, ,,	1.2	8.1	80.2	10.5	..	7,580	13,660	..	Non-coking. Ash, pinkish-grey. Exp. evap. power = 12.8	1691B	A.R., p. 380 (1911)	J.B.H.

165	Dawson R.	Dunstan Seam (1) ..	*Ferguson*, Leichhardt	3.8	12.6	87.8	4.8	Trace	8,060	14,508	1.4		1692	G.S.Q.P. 155, p. 25 and Fig. 11 (1901)	J.B.H.
166	Ditto	(2) ..	,, ,,	3.9	13.7	77.0	5.5	,,	8,056	14,500	1.4	Seven samples from a 10-ft. seam exposed in bed of Dawson R., near Dawson Island. Non-coking. Ash, dirty-white	1692	ditto	,,
167	Ditto	(3) ..	,, ,,	4.0	13.2	77.3	5.4	,,	8,015	14,427	1.4		1692	ditto	,,
168	Ditto	(4) ..	,, ,,	3.5	12.9	79.3	4.2	,,	8,139	14,650	1.4		1692	ditto	,,
169	Ditto	(5) ..	,, ,,	2.8	11.1	81.8	4.1	,,	8,109	14,596	1.4		1692	ditto	,,
170	Ditto	(6) ..	,, ,,	4.0	13.4	78.8	3.6	,,	8,164	14,695	1.4		1692	ditto	,,
171	Ditto	(7) ..	,, ,,	4.2	13.7	76.0	6.1	,,	7,975	14,355	1.4		1692	ditto	,,
172	Ditto	.. ..	,, ,,	1.2	8.3	84.1	6.3	0.6	7,933	14,279	..	Bulk sample of 20 tons. Non-coking. Ash, light-brown	1692	A.R., p. 72 (1906)	J.B.H.
173	Ditto	.. ..	,, ,,	1.0	8.1	83.4	7.5	0.8	7,850	14,130	..	From 60 tons of slack on surface. Non-coking. Ash, light-brown	1692	A.R., p. 72 (1906)	J.B.H.
174	Ditto	Outcrop	,, ,,	2.9	10.8	81.2	5.4	..	8,021	14,437	..	*See also* Ult. Analysis No. 425	1692	O.R.	—
175	Ditto	B Shaft	,, ,,	1.3	9.0	83.8	5.9	..	7,999	14,398	..	..	1692	A.R., p. 75 (1906)	J.B.H.
176	Ditto	Loveday's Shaft ..	,, ,,	1.2	11.3	81.3	5.6	0.5	8,094	14,569	1.33	Exp. evap. power, 10.93; Heat power by Thomson's Calorimeter = 15.05. First-class coal for steam and navigation purposes	1692	A.R.D.M., p. 171 (1902)	T. & T.
177	Ditto	No. 2 Bore ..	,, ,,	10.8		83.6	5.5	..	..	..	..	..	1692	Q.G.M.J. (1905), p. 14, and Plan 2	H.A.
178	Ditto	No. 3 Bore ..	,, ,,	9.4		85.0	5.6	..	..	..	..	..	1692	Q.G.M.J. (1905), p. 14, and Plan 2	H.A.
179	Ditto	No. 2 (No. 7) Bore	,, ,,	1.5	8.7	53.7	36.1	..	5,507	9,912	..	..	1692	L.B. 8, p. 470 (1894)	J.B.H.
180	Ditto	No. 3 (No. 7) Bore	,, ,,	1.4	7.6	60.1	30.9	..	5,886	10,594	..	..	1692	L.B. 8, p. 470 (1894)	J.B.H.
186	Frenchman Plains, nr. Blackwater, C.Q.R., 6½-mile shaft		*Humboldt*, Leichhardt	1.1	18.3	70.5	10.1	..	7,575	13,635	..	Semi-coking. Ash, white ..	1689	L.B. 8, p. 507 (1904)	J.B.H.
187	Ditto	.. ..	,, ,,	1.4	19.5	72.5	6.6	..	7,858	14,144	..	Semi-coking. Ash, white ..	1689	L.B. 8, p. 507 (1904)	J.B.H.
188	Ditto	17-ft. seam (lower part)	,, ,,	1.7	18.3	71.7	8.3	..	7,673	13,811	..	Cokes with considerable intumescence	1689	Q.G.M.J. (1904), p. 330	J.B.H.
189	Ditto	seam-top 6 ft. over band (mean of 2 tests)	,, ,,	0.4	17.0	72.1	10.4	..	7,576	13,636	..	Samples supplied by Company	1689	Letter, Feb., 1905 ..	J.B.H.
190	Ditto	(?) Seam	,, ,,	1.3	16.2	70.3	12.2	0.86	7,349	13,228	1.4	Cokes slightly. Ash, brown ..	1689	L.B. 8, p. 175 (1903)	J.B.H.
191	Ditto	.. ..	,, ,,	1.5	14.7	75.8	8.0	0.49	8,088	14,558	1.3	Cokes slightly. Ash, brown ..	1689	L.B. 8, p. 175 (1903)	J.B.H.
192	Ditto	.. ..	,, ,,	1.3	16.7	71.3	10.7	0.45	7,480	13,464	1.4	Cokes slightly. Ash, brown ..	1689	L.B. 8, p. 175 (1903)	J.B.H.
193	Ditto	.. ..	,, ,,	1.4	16.1	76.3	6.2	0.52	7,828	14,090	1.3	Cokes slightly. Ash, brown ..	1689	L.B. 8, p. 175 (1903)	J.B.H.
194	Ditto	.. ..	,, ,,	1.5	14.5	77.5	6.5	0.74	8,201	14,761	1.3	Cokes slightly. Ash, brown ..	1689	L.B. 8, p. 175 (1903)	J.B.H.
195	Ditto	.. ..	,, ,,	1.3	19.5	70.1	9.1	..	7,663	13,793	..	Forms hard cake; partly cokes. Ash, grey. Exp. evap. power = 13.66. (*See* Ult. Analysis No. 428.)	1689	L.B. 8, p. 559 (1904)	J.B.H.
196	Ditto	.. ..	,, ,,	0.5	16.7	72.4	10.3	..	7,570	13,626	..	..	1689	A.R., p. 3 (1905)	J.B.H.
197	Ditto	.. ..	,, ,,	0.4	17.3	71.7	10.5	..	7,573	13,631	..	..	1689	A.R., p. 3 (1905)	J.B.H.
198	Ditto	.. ..	,, ,,	1.6	16.7	72.2	9.5	..	7,554	13,597	..	Slightly coking. Ash, grey. Exp. evap. power = 13.07	1689	A.R., p. 55 (1906)	J.B.H.
199	Ditto	.. ..	,, ,,	1.4	15.6	68.6	14.4	..	7,150	12,870	..	Non-coking. Ash, light-brown. Exp. evap. power = 12.27	1689	A.R., p. 55 (1906)	J.B.H.
200	Ditto	.. ..	,, ,,	1.2	18.2	70.1	10.5	..	7,533	13,559	..	Slightly coking. Ash, grey. Exp. evap. power = 12.87	1689	A.R., p. 55 (1906)	J.B.H.
201	Ditto	.. ..	,, ,,	1.7	16.4	71.9	10.0	..	7,499	13,498	..	Does not coke well. Ash, grey. Exp. evap. power = 12.08	1689	A.R., p. 57 (1906)	J.B.H.

COAL.—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

Coal Table No.	POSITION.		PROXIMATE ANALYSIS, ETC.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons.	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units.*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names.*	Analyst.
			%	%	%	%	%							
206	Jellinbah (Mackenzie R.) ..	*Leura*, Leichhardt	1.6	16.1	73.8	8.5	..	7,624	13,723	..	Harbour Board test. (*See* Ult. Analysis No. 430.)	*See* 1696	A.R., p. 6 (1905)	J.B.H.
207	Ditto	,, ,,	1.7	14.5	72.7	11.1	..	7,810	14,058	..	Harbour Board test. (*See* Ult. Analysis No. 431.)	1696	A.R., p. 6 (1905)	J.B.H.
208	Ditto	,, ,,	1.9	15.9	71.0	11.2	..	7,376	13,276	..	Harbour Board test. (*See* Ult. Analysis No. 432.)	1696	A.R., p. 6 (1905)	J.B.H.
209	Ditto	,, ,,	2.0	16.7	75.3	5.8	Trace	7,806	14,050	..	..	1696	G.S.Q.P. 155, p. 25 (1901)	J.B.H.
210	Ditto	,, ,,	10.1	14.8	64.6	10.5	..	7,188	12,938	..	..	1696	L.B. 7, p. 785 (1902)	J.B.H.
214	Near 107-mile peg, C.Q.R. ..	*Humboldt*, Leichhardt	1.3	7.0	65.3	26.4	..	6,231	11,215	..	..	1686	L.B. 8, p. 411 (1903)	J.B.H.
215	Stanley, C.Q. Rail.	,, ,,	2.0	9.0	80.0	9.0	..	7,690	13,842	..	Unofficial	1689A	..	..
216	Tolmie's (Bottom Seam, No. 1) ..	,, ,,	7.1	21.1	43.6	28.2	..	5,663	10,193	..	Inferior coking. Sample from under water in No. 1 tunnel	1690	G.S.Q.P. 155, p. 18 (1901)	J.B.H.
217	Ditto (,, No. 2) ..	,, ,,	2.2	19.9	53.0	24.9	..	6,309	11,356	..	Inferior coking	1690	G.S.Q.P. 155, p 18 (1901)	J.B.H.
218	Ditto (,, No. 3) ..	,, ,,	1.4	24.1	59.1	15.4	..	7,226	13,006	..	Inferior coking	1690	G.S.Q.P. 155, p. 18 (1901)	J.B.H.
219	"Tolmie's Coal Mine"	,, ,,	0.71	16.5	56.2	26.5	Trace	6,230	11,214	..	..	1690	G.S.Q.P. 107, p. 4 (1895)	J.B.H.
222	Wallaroo, nr. Tryphinia, C.Q.R., (No. 5 Bore)	*Kimberley*, Leichhardt	1.3	16.5	68.3	13.7	..	7,216	12,988	..	..	1695	Q.G.M.J. (1904), p. 128	—
223	Ditto (1st sample)	,, ,,	2.1	9.5	75.7	12.7	..	7,404	13,327	..	Non-coking. Ash, white ..	1695	A.R.D.M. (1903), p. 173	J.B.H.
224	Ditto (2nd sample, 3-ft. seam)	,, ,,	1.7	11.7	78.3	8.2	..	7,902	14,223	..	Non-coking. Coal friable. (*See* Ult. Analysis No. 437.)	1695	Q.G.M.J. (1904), p. 330, and O.R.	—
225	Ditto (?) Seam	,, ,,	1.5	8.9	79.9	9.7	..	7,668	13,802	..	Harbour Board test. (*See* Ult. Analysis No. 435.)	1695	A.R., p. 6 (1905)	J.B.H.
226	Ditto (?) Seam	,, ,,	1.5	7.9	81.1	9.5	..	7,636	13,744	..	Harbour Board test. (*See* Ult. Analysis No. 436.)	1695	A.R., p. 6 (1905)	J.B.H.
	Deighton River, near Cooktown	..	*See* Nos. 101, 102, 102A, 102B, 415, and 415A.											
	Dinmore Coll., &c., Ipswich Caalfield ..	..	,, Nos. 264, &c.											
	Donnybrook Coll., Ipswich Coalfield ..	..	,, No. 282.											
	Dundee Mine, near Howard	..	,, Nos. 53A and 53B.											
	Dunstan Mine, Dawson River	..	,, Nos. 165–180, and 425.											
	Eagle Farm, near Brisbane	..	,, No. 41.											
	Eastwood Mine, Ipswich Coalfield ..	..	,, No. 284.											
	Eudlo—													
231	2¼ miles W. of, in Donnelly's Sel. 39v	*Canning*, Moreton	1.3	33.0	48.7	16.9	..	7,104	12,787	1.1	Caked well; compact	1711	G.S.Q.P. 98, p. 4 (1894)	—
	Fairbank Mine, Ipswich Coalfield ..	..	*See* Nos. 252 and 253.											
	Fairlight Stn., Little River Coalfield ..	..	,, Nos. 316–319, 321.											
	Federal Coll., near Toowoomba	..	,, No. 345.											

	Flagstone Cr., near Helidon	..	„ No. 241.											
	Flinders R.—													
233	18 miles N.N.W. of Warreah (Coalbrook) Rly. Stn.	*Wongalee*, Burke	8.8	37.3	51.0	2.8	..	7,513	13,523	1.3	Coke, hard. Ash, whitish and siliceous	1598	G.S.Q.P. 44, p. 2 (1888)	—
	Forest Vale Stn., near Mitchell	..	*See* No. 338.											
	Frenchman's Plains, C.Q. Rly.	..	„ Nos. 186-201, 428.											
	Friend's Well, near Stanwell	..	„ Nos. 351, 352.											
	Galah Gorge, near Hughenden	..	„ Nos. 244, 244A.											
	Garrick Seam, Bowen River	..	„ Nos. 22–24.											
	Gatton—													
235	10 miles S. of, at Blackfellow's Cr.	*Churchill*, Moreton	42.4		45.6	12.0	..	..	..	1.3	Very hard cannel coal. Cokes. Carbon in coke = 70.2 %. Ash in coke = 20.8 %	1721	G.S.Q.P. 92, pp. 338, 341 (1892)	A.C.G.
	Golder's Sel., near Millmerran	..	*See* No. 337A.											
	Goodna, Ipswich Coalfield	..	„ No. 260.											
	Good Hope Mine, Ipswich Coalfield ..	..	„ Nos. 309, 309A, 309B, 309C, 309D, and 309E.											
	Goomburra, near Maryvale	..	„ No. 335.											
	Gowrie—													
238	Near Gowrie Rly. Stn.	*Aubigny*, D. Downs	5.5	39.2	46.0	9.3	0.8	7,277	13,098	..	..	1623	L.B. 7, p. 723 (1902)	J.B.H.
239	Near Kingsthorpe Rly. Stn. (Por. 27v, Meringandan)	„ „	3.6	40.2	43.6	12.6	..	7,171	12,907	..	Cokes without intumescence. Ash, light-grey	1623A	A.R., p. 262 (1910)	J.B.H.
	Gunalda, N.E. of Gympie	..	*See* Nos. 384, 385.											
	Gundiah, near Tiaro	..	„ No. 386.											
	Guppy's Tableland, near Cooktown ..	..	„ No. 103.											
	Haighmoor Coll., Ipswich Coalfield ..	..	„ Nos. 286–288.											
	Hampden, near Mackay	..	„ Nos. 329, 330.											
	Helidon—													
241	8 miles S.W. of, near Flagstone Cr. (Por. 44)	*Churchill*, Moreton	36.3		47.4	16.3	..	..	..	1.3	Moderately hard; cokes. Carbon in coke = 74.4 %; ash in coke = 25.6%	1723	G.S.Q.P. 92, pp. 338 and 341 (1892)	A.C.G.
242	Palm Tree Cr., 8 miles from Helidon	„ „	16.2	25.2	32.9	25.6	..	5.201	9,361	..	..	1720	A.R., p. 107 (1907)	J.B.H.
	Howard Coal Seams	..	*See* Nos. 51, 53A, 53B, 54 (?), 56, 57, 57A, 58, 59, and 413.											
	Hughenden—													
244	44 miles N.N.E. of, at Galah Gorge	*Wongalee*, Burke	7.7	19.7	41.4	31.2	..	5,344	9,619	..	..	1598A	Q.G.M.J., p. 638 (1909)	J B.H.
244A	Ditto	„ „	14.9	26.5	34.2	24.4	..	5,437	9,786	..	..	1598A	ditto	J.B.H.
245	Ditto New Marathon Bore ..	*Douglas* „	9.6	31.0	50.4	9.0	..	7,052	12,693	..	Coke not cohesive. Sample too small for test	1595	L.B. 4, p. 938 (1897)	J.B.H.
245A	Prairie (near), about 28 miles E. of Hughenden	*Woura*, Mitchell	6.9	26.2	45.9	21.0	..	6,360	11,448	..	Partially cakes, but does not coke or intumesce. Ash, light red	1709A	A.R., p. 279 (1910)	J.B.H.
	Inglewood—													
247	23 miles N. of, and 25 miles N. of Canning Stn., on Bringalily Cr.	*Marsh*, D. Downs	2.8	40.2	23.1	33.7	0.3	5,299	9,538	..	Exp. evap. power = 9.9 ..	1628	Q.G.M.J., p. 562 (1902)	J.B.H.
	IPSWICH COALFIELD—													
	(*a*) Blackstone, Bundamba, Dinmore, and Goodna—													
249	Aberdare Coll.	*Stanley*, Moreton	1.5	31.3	58.6	8.6	..	7,749	13,948	..	Bulk sample supplied by proprs.	1730	A.R., p. 137 (1908)	J.B.H.
250	Aberdare Seam, Blackstone ..	„ „	1.7	33.1	60.6	4.5	0.7	8,083	14,549	..	Ash in coke = 7.4 %. Bulk sample supplied by proprs.	1730	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
251	Aberdare Seam, Thomas's Mine, Por. 270, Par. Bundamba	„ „	29.8		59.2	11.0	..	..	..	1.4	Carbon in coke = 84.3 %. Ash in coke = 15.7 %	1748	G.S.Q.P. 92, pp. 335, 341 (1892)	A.C.G.

COAL.—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

Coal Table No.	POSITION.		PROXIMATE ANALYSIS, Etc.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names*.	Analyst.
			%	%	%	%	%					*See*		
IPSWICH COALFIELD—*continued.*														
252	Aberdare Seam—Walker's Fairbank Mine	*Stanley*, Moreton	1.7	29.0	58.8	10.4	..	7,692	13,845	..	Cokes. Ash, white	1754	A.R., p. 5 (1905)	J.B.H.
253	Ditto .. .. Ultimate Analysis, see No. 440	,, ,,	1.9	29.0	60.2	8.9	..	7,806	14,050	..	Cokes. Ash, white.	1754	A.R., p. 5 (1905)	J.B.H.
254	Bogside Coll.	,, ,,	2.0	28.4	60.1	9.5	..	7,738	13,928	..	..	1731	O.R.	—
255	Bonnie Dundee Coll.	,, ,,	1.6	32.2	60.4	5.8	..	7,981	14,365	..	Bulk sample supplied by proprs.	1733	A.R., p. 137 (1908)	J.B.H.
256	Box Flat Coll.	,, ,,	1.6	30.6	59.2	8.6	..	7,731	13,915	..	Bulk sample supplied by proprs.	1734	A.R., p. 137 (1908)	J.B.H.
257	Braeside (Bundamba No. 4 or Hard Seam	,, ,,	1.1	31.2	59.1	8.5	0.6	7,780	14,004	..	Ash in coke = 14.5 %	1735	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
258	Braeside (No. 1. Seam)	,, ,,	1.8	30.0	59.2	9.0	..	7,749	13,948	..	..	1735	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
259	Dobbie's Seam	,, ,,	1.7	24.3	27.1	46.9	..	4,638	8,348	..	..	1732	L.B. 8, p. 395 (1903)	J.B.H.
260	Goodna Mine	,, ,,	28.8		62.2	9.0	..	..	..	1.4	Coal rather friable; cokes well. Carbon in coke = 87.4 %. Ash in coke = 12.6 %	1739	G.S.Q.P. 92, pp. 334 and 341 (1892)	A.C.G.
261	Lyons's Seam (1 mile S.W. of old Moggill Mine)	,, ,,	38.2		51.0	10.8	..	..	..	1.5	Coal moderately hard; cokes. Carbon in coke = 82.6 %. Ash in coke = 17.4 %	1765	G.S.Q.P. 92, pp. 334 and 341 (1892)	A.C.G.
261A	Mafeking (½ mile S.E. of colliery)	,, ,,	1.5	27.5	55.0	16.0	..	7,232	13,017	..	..	1740B	A.R., p. 301 (1911)	J.B.H.
261B	Ditto	,, ,,	1.5	29.4	46.1	23.0	..	6,697	12,054	..	..	1740B	A.R., p. 301 (1911)	J.B.H.
262	New Aberdare Coll.—Top Seam..	,, ,,	1.8	30.6	55.9	11.7	..	7,462	13,431	..	Exp. evap. power = 12.56 ..	1741	A.R., p. 157 (1908)	J.B.H.
263	Ditto Bottom Seam	,, ,,	1.7	15.2	67.7	15.4	..	7,037	12,666	..	Exp. evap. power = 10.89 ..	1741	A.R., p. 157 (1908)	J.B.H.
264	New Chum Seam, Dinmore Coll.	,, ,,	1.0	28.7	60.0	9.5	1.7	7,760	13,968	..	Ash in coke = 15.8 %. Bulk sample supplied by owners	1736	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
265	New Chum Seam, Whitwood Coll.	,, ,,	2.0	30.5	64.1	3.3	0.8	8,121	14,617	..	Ash in coke = 5.2 %. Bulk sample supplied by owners	1757	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
266	Oakbank Coll.	,, ,,	1.4	30.9	58.2	9.5	..	7,678	13,820	..	..	1743	A.R., p. 95 (1907)	J.B.H.
267	Ditto	,, ,,	1.4	30.5	53.6	14.5	..	7,265	13,077	..	..	1743	A.R., p. 95 (1907)	J.B.H.
268	Ditto	,, ,,	1.5	31.5	60.4	6.6	..	7,915	14,247	..	..	1743	A.R., p. 95 (1907)	J.B.H.
269	Ditto	,, ,,	1.6	28.3	50.2	19.9	..	6,921	12,457	..	Exp. evap. power = 11.07 ..	1743	A.R., p. 114 (1907)	J.B.H.
270	Ditto	,, ,,	1.8	29.5	52.6	16.1	..	7,236	13,024	..	Exp. evap. power = 11.68 ..	1743	A.R., p. 114 (1907)	J.B.H.
271	Old Aberdare Seam, Thomas's Mine, Por. 270, Par. Goodna	,, ,,	28.8		57.2	14.0	..	..	..	1.4	Coal hard and bright; coke fair. Carbon in coke = 80.3 %; ash in coke = 19.7 %	1749	G.S.Q.P. 92, pp. 335 and 341 (1892) and G.S.Q.P. 147, p. 20 (1899)	A.C.G.
272	Rhondda Coll.	,, ,,	2.1	28.3	56.2	13.4	..	7,410	13,338	..	..	1744	Memo. Govt. Analyst to Mines Dept , 10-1-08	J.B.H

273	Swanbank Coll., No. 2 Seam ..	,,	,,	2.1	29.6	60.0	8.3	1.7	7,850	14,130	..	Ash in coke = 15.5 %. Bulk sample supplied by proprs.	1747	G.S.Q.P. 147, p. 21 (1899)	J.B.H
274	Thompson's New Mine, Por. 174, Bundamba	,,	,,	31.7		62.3	6.0	..	..	..	1.3	Coal bright and friable; cokes well. Carbon in coke = 91.2 %; ash in coke = 8.8 %	1750	G.S.Q.P. 92, pp. 335 and 341 (1892)	A.C.G
(b)	North Ipswich—														
281	Bishop's Seam (Bishop's Coll.) ..	,,	,,	1.1	24.7	72.7	1.4	1.0	8,395	15,111	..	Ash in coke = 2 %	1758	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
282	Bishop's Seam (Donnybrook Coll.)	,,	,,	0.9	25.6	62.0	11.4	1.2	7,613	13,703	..	Ash in coke = 18.3 %	1737	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
283	Blond and Wright's Seam ..	,,	,,	26.2		56.4	17.4	..	..	..	1.3	Cokes. Carbon in coke = 76.4 %; ash in coke = 23.6 %	1752	G.S.Q.P. 92, pp. 336 and 341 (1892)	A.C.G.
284	Eastwood Mine	,,	,,	25.0		63.0	12.0	..	..	..	1.4	Coal is bright and soft. Cokes well. Carbon in coke = 84.0 %; ash in coke = 16 %	1738	G.S.Q.P. 92, pp. 336 and 341 (1892)	A.C.G.
285	Garden Seam (Waterstown Mine)	,,	,,	25.2		62.0	12.8	..	..	..	..	Coal is fairly hard; cokes well	1755	G.S.Q.P. 92, p. 344 (1892)	A.C.G.
286	Haighmoor Coll., Tivoli	,,	,,	1.1	27.1	64.1	7.6	1.7	7,934	14,281	..	Ash in coke = 10.2 %	1740	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
287	Ditto (Bottom Seam)	,,	,,	1.1	23.4	62.2	13.3	..	7,409	13,336	..	(Eclipse Seam)	1740	A.R., p. 139 (1908)	J.B.H.
288	Ditto (Tivoli top seam)	,,	,,	1.4	23.9	61.3	13.4	..	7,385	13,293	..	(Old Tivoli Seam)	1740	A.R., p. 139 (1908)	J.B.H.
289	New Mine, near Tivoli (prob. Eastwood Seam)	,,	,,	30.8		61.0	8.2	..	..	..	1.3	Cokes. Carbon in coke = 88.2%; ash in coke = 11.8%	1742	G.S.Q.P. 92, pp. 337 and 341 (1892)	A.C.G.
290	Rocky Crossing (Brisbane R.), 2 miles N.W. of Tivoli Mine	,,	,,	22.0		50.9	27.1	..	..	..	1.4	Coal of inferior quality. Cokes. Carbon in coke = 65.3%; ash in coke = 34.7%	1745	G.S.Q.P. 92, pp. 337 and 341 (1892)	A.C.G.
291	Rothwell Haigh Mine	,,	,,	0.7	23.7	62.7	12.8	0.4	7,480	13,464	..	Crushed unwashed coal for coking	1746	A.R., p. 40 (1906)	J.B.H.
292	Ditto	,,	,,	0.7	24.4	64.2	10.5	0.4	7,672	13,809	..	Crushed and washed coal for coking	1746	A.R., p. 40 (1906)	J.B.H.
293	Ditto	,,	,,	1.4	23.9	61.1	13.6	0.4	7,369	13,264	..	Unwashed coal	1746	A.R., p. 42 (1906)	J.B.H.
294	Ditto	,,	,,	1.4	23.8	60.6	14.2	0.4	7,318	13,172	..	Unwashed coal	1746	A.R., p. 42 (1906)	J.B.H.
295	Ditto	,,	,,	2.2	23.4	66.6	7.8	0.4	7,767	13,980	..	Washed coal	1746	A.R., p. 43 (1906)	J.B.H.
296	Ditto	,,	,,	1.3	25.0	64.3	9.4	0.3	7,740	13,932	..	Screened and washed coal ..	1746	A.R., p. 43 (1906)	J.B.H.
297	Ditto	,,	,,	1.0	22.5	64.7	11.8	..	7,523	13,541	..	Bottom level, Eclipse Seam ..	1746	A.R., p. 139 (1908)	J.B.H.
298	Ditto	,,	,,	1.2	21.8	60.8	16.2	..	7,135	12,843	..	Top level, Eclipse Seam ..	1746	A.R., p. 139 (1908)	J.B.H.
299	Tivoli Mine	,,	,,	26.7		66·4	6.9	..	..	..	1.3	Coal is bright and soft; makes excellent coke. Carbon in coke = 90.6%; ash in coke = 9.4%	1751	G.S.Q.P. 92, pp. 336 and 341 (1892)	A.C.G.
300	Tivoli Seam (Waterstown Coll.) ..	,,	,,	0.5	28.0	66.0	5.4	1.3	8,179	14,722	..	Bulk sample supplied by owners. Ash in coke = 8.3%.	1756	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
301	Wright's New Tivoli Coll. (Tivoli Seam) Ultimate Analysis, *see* No. 443.	,,	,,	2.5	23.4	53.0	21.0*	1.0	6,659	11.987	..	*Abnormal for this mine. 30% ash in coke	1759	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
(e)	Walloon—														
306	Caledonian Mine (Wright) ..	*Churchill*,	Moreton	4.7	38.0	48.0	9.3	1.5	7,341	13,213	..	Ash in coke = 19.0%	1725	G.S.Q.P. 147, p. 21 (1899)	J.B.H.
7	Walloon Station (near)	,,	,,	47.0		36.0	17.0	..	..	..	1.3	Coal very hard; coking. Carbon in coke = 67.9%; ash in coke = 32.1%	1727	G.S Q.P. 92, pp 337 and 341 (1892)	A.C.G.

COAL.—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

	POSITION.		PROXIMATE ANALYSIS, ETC.								REMARKS.	REFERENCES.		
Coal Table No.	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names.*	Analyst.
			%	%	%	%	%					*See*		
	IPSWICH COALFIELD—*continued.*													
	(*c*) Walloon—*continued.*													
308	Walloon Coll.	*Churchill*, Moreton	4.0	40.0	50.0	6.0	..	7,575	13,635	..	A first-class gas coal	1726	G S Q.P. 92, p. 345 (1892)	J.E. Ten.-W.
	(*d*) Yahmahnto (Loamside)—													
309	Good Hope Mine (West's) Bottom	,, ,,	7.3	29.6	29.9	33.2	..	5,396	9,712	..	..	1728A	A.R., p. 317 (1911)	J.B.H.
309A	Ditto (Top band)	,, ,,	7.0	33.2	45.5	14.3	..	6,862	12,351	..	Exp. evap. power = 10.2 ..	1728B	A.R., p. 346 (1911)	J.B.H.
309B	Ditto (Mid. and lower bands)	,, ,,	5.8	38.3	42.8	13.1	..	6,935	12,483	..	Exp. evap. power = 10.9 ..	1728B	A.R., p. 346 (1911)	J.B.H.
309C	Good Hope Mine (West's), No. 1 sample	,, ,,	7.5	37.6	47.8	7.1	..	7,279	13,102	..	Cokes. Ash, grey	1728	A.R., p. 22 (1905)	J.B.H.
309D	Ditto No. 2 sample	,, ,,	4.8	40.8	44.9	9.5	..	7,127	12,828	..	Cokes. Ash, grey	1728	A.R., p. 22 (1905)	J.B.H.
309E	Ditto No. 3 sample	,, ,,	6.2	39.3	48.2	6.3	..	7,465	13,437	..	Cokes. Ash, grey	1728	A.R., p. 22 (1905)	J.B.H.
310	Speedwell Coll. (2-ft. seam) Top	,, ,,	5.7	33.9	35.0	25.4	..	6,072	10,929	..	Exp. evap. power = 9.2 ..	1728C	A.R., p. 320 (1911)	J.B.H.
310A	Ditto (Middle Seam—top, 13 in.)	,, ,,	6.8	38.7	46.6	7.9	..	7,280	13,104	..	Exp. evap. power = 11.7 ..	1728C	A.R., p. 321 (1911)	J.B.H.
310B	Ditto (Middle Seam, 1 ft. 6 in. middle)	,, ,,	6.1	38.2	43.6	12.1	..	6,991	12,583	..	Exp. evap. power = 11.3 ..	1728C	A.R., p. 321 (1911)	J.B.H.
310C	Ditto (Middle Seam bottom, 1 ft.)	,, ,,	6.8	39.6	47.9	5.7	..	7,467	13,440	..	Exp. evap. power = 12.0 ..	1728C	A.R., p. 321 (1911)	J.B.H.
310D	Ditto (Bottom Seam) ..	,, ,,	8.2	35.6	43.7	12.5	..	6,943	12,497	..	Exp. evap. power = 10.7 ..	1728C	A.R., p. 322 (1911)	J.B.H.
	Jellinbah, Mackenzie River	..	*See* Nos. 206-210, 430-432.											
	Jimbour, N. of Dalby	..	,, Nos. 107, 108.											
	Kedron Brook, near Brisbane	..	,, No. 38.											
	Kingsthorpe—													
314	Sugarloaf Coll.	*Aubigny*, D. Downs	5.6	36.7	40.2	17.5	..	6,579	11,842	..	Exp. evap. power = 10.4 ..	..	O.R., (1910)	J.B.H.
	Littabella Creek, near Bundaberg ..	..	*See* No. 49.											
	LITTLE RIVER COALFIELD—													
316	Dave Cr., near Fairlight Stn. ..	*Mosman*, Cook	1.6	11.1	76.1	10.8	0.4	7,645	13,761	1.4	Sample of best coal	1613	G.S.Q.P. 91, p. 2 (1893)	A.W.C.
317	Ditto	,, ,,	2.1	9.4	82.4	6.0	0.1	7,937	14,286	1.3	Picked sample of the brightest coal	1613	G.S.Q.P 91, p. 2 (1893)	A.W.C.
318	Ditto	,, ,,	0.9	9.4	58.6	31.1	..	5,997	10,794	1.3	(*See* also No. 323.)	1613	G.S.Q.P. 11, p. 2 (1882)	R.L.J.
319	Ditto 4 miles above Fairlight Stn.	,, ,,	2.7	26.2	63.0	8.0	..	7,754	13,957	1·3	Surface coal	1615	G.S.Q.P. 11, p. 3 (1882)	R.L.J.
320	Ditto near Bower Bird Gully, 8-ft. seam	,, ,,	18.3*	66.0		15.7	..	..	..	..	* With a little gas	1617	G.S.Q.P. 92, p. 175 (1892)	K.S.

321	Ditto near Fairlight, E. bank of Little R.	,, ,,	1.7	13.0	78.5	6.8	0.1	8,087	14,556	1.4	Picked sample	1614	G.S.Q.P. 91, p. 2 (1893)	A.W.C.
322	Ditto "Shaft in Creek" ..	,, ,,	1.6	6.1	83.9	8.4	..	7,630	13,734	..	Museum sample	1616	O.R.	J.B.H.
323	St. George Mine at Dave Cr. ..	,, ,,	2.2	7.8	79.5	10.5	..	7,493	13,487	..	(*See* also Nos. 316-318)	1613	G.S.Q.P. 222, p. 29 (1910)	J.B.H.
	Loamside, Ipswich Coalfield	..	*See* Nos. 309-310D.											
	Macarthur Cr., Bowen R.	..	,, No. 26.											
	MACKAY—													
326	Black Rock Cr. (Bottom Seam) ..	*Carlisle*, South Kennedy	0.9	20.0	61.7	17.3	..	7,028	12,650	..	Non-coking. Ash, grey ..	1644	G.S.Q.P. 175, p. 13 (1902)	—
327	Ditto (Top)	,, ,,	1.1	19.1	56.0	23.8	..	6,474	11,653	..	Non-coking. Ash, grey ..	1644	G.S.Q.P. 175, p. 13 (1902)	—
328	Ditto (Por. 1450) ..	,, ,,	1.0	23.5	59.4	16.1	..	7,191	12,943	..	..	1644	G.S.Q.P. 181, p. 8 (1903)	J.B.H.
328A	Ditto (Por. 1450) ..	,, ,,	1.2	14.8	52.2	31.8	..	6,178	11,120	..	Non-coking. Ash, light-pink ..	1644	G.S.Q.P. 229, p. 43 (1910)	J.B.H.
328B	Ditto No. 1 Shaft (1 mile from Cr.)	,, ,,	11.0	24.2	46.3	18.5	..	6,193	11,147	..	Non-coking. Ash, very light pink	1644	G.S.Q.P. 229, p. 44 (1910)	J.B.H.
328C	Ditto No. 2 Shaft (2 miles from Cr.)	,, ,	2.4	16.2	60.0	21.4	..	6,510	11,718	..	Non-coking. Ash, slightly grey	1644	G.S.Q.P. 229, p. 44 (1910)	J.B.H.
328D	Ditto No. 2 Shaft (sample from slack)	,, ,,	1.3	17.3	62.3	19.1	..	6,807	12,252	..	Cakes and partly cokes. Ash, grey	1644	G.S.Q.P. 229, p. 44 (1910)	J.B.H.
329	Constant Cr., Hampden, 20 miles N.W. of Mackay	,, ,,	2.4	2.2	65.8	29.6	..	5,648	10.166	..	Seam contains 2 ft. of inferior anthracite	.1646	G.S.Q.P. 164, p. 12 (1901)	J.B.H.
330	Hampden	,, ,,	2.3	5.0	71.1	21.5	..	6,444	11,599	..	Part of Seam No. 329	1646	G.S.Q.P. 164, p. 13 (1901)	J.B.H.
331	Mt. Toby (4½ miles N. of Mirani)	,, ,,	6.3	34.3	51.8	7.6	..	7,480	13,464	..	..	1647	G.S.Q.P. 164, p. 14 (1901)	J.B.H.
332	St. Helen's Cr.	,, ,,	0.8	15.0	66.1	18.0	..	7,112	12,801	1.4	Hard, stony coke. Ash, grey ..	1649	G.S.Q.P. 39, p. 2 (1887)	—
333	Walker's Cr., 2 miles above Carborough Cr.	*Wodehouse*, Leichhardt	3.0	8.7	84.7	3.5	..	8,034	14,461	1.3	Ash, pale brown	1704	G.S.Q.P. 39, p. 3 (1887)	—
334	Walker's Shaft, Bee Cr.	,, ,,	2.8	12.6	60.9	23.6	..	6,601	11,881	1.5	Ash, white	1701	G.S.Q.P. 39, p. 2 (1887)	—
	Mackenzie River, W. of Rockhampton ..	..	*See* under Dawson-Mackenzie Coal Measures.											
	Mafeking, Ipswich Coalfield	..	,, Nos. 261A and 261B.											
	Mammoth Mines, near Blackwater, C.Q.R.	..	,, Nos. 186-201, 206-210, 428, 430-432.											
	Marathon Bore, near Hughenden ..	..	,, No. 245.											
	Maranoa River, near Mitchell	..	,, No. 338.											
	Maryvale—													
335	Nr. Rail. Stn., about 19 miles by rail N.E. of Warwick	*Merivale*, D. Downs	4.4	40.2	39.6	15.8	..	6,845	12,321	..	..	1633A	A.R., p. 39 (1912)	J.B.H.
336	Ditto	,, ,,	2.2	43.3	30.5	18.0	..	6,654	11,977	..	..	1633A	A.R., p. 100 (1912)	J.B.H.
	Miles—													
337	50 miles N.N.W. of, in Roche Creek	*Fortescue*, Leichhardt	15.4	33.8	26.6	24.2	..	5,378	9,680	..	A surface coal	1678	Memo. J.B.H. to Chief Engr. Rlys, 31-1-07	J.B.H.
	Millmerran—													
337A	6 miles S. by W. of (in Golder's Sel., Mt. Domville)	*Derby*, D. Downs	3.4	47.6	42.7	6.3	..	7,208	12,974	..	..	1626AI	A.R., p. 20 (1912)	J.B.H.
	Mitchell—													
338	40 miles N. of, at Forest Vale Station, Maranoa River	*Bundara*, Maranoa	5.0	46.2	34.2	14.6	..	6,483	11,669	..	Exposed in bank of river ..	1706B	A.R., p. 350 (1911)	J.B.H.
	Miva, near Tiaro	..	*See* No. 390.											
	Mooretown—													
339	18 miles N.W. of, on Cooyar Creek	*Cavendish*, Moreton	1.7	16.9	45.6	35.7	..	5,406	9,730	..	..	1717	A.R., p. 106 (1907)	J.B.H
	Moreton Island, near Brisbane	..	*See* Nos. 37, 39											
	Mount Bopple, near Tiaro	..	,, No. 383.											
	Mount Domville, near Millmerran ..	..	,, 337A.											
	Mount Mulligan, near Thornborough ..	..	,, Nos. 381, 382, 382A to 382J, 445											
	Mount Sturgeon, near Hughenden ..	..	,, Nos. 244, 244A.											
	Muldu (Oakey-Cooyar Railway)	..	,, Nos. 343 and 344.											

COAL.—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

Coal Table No.	POSITION.		PROXIMATE ANALYSIS, ETC.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under "Abbreviations" for Titles and Names.*	Analyst.
			%	%	%	%	%					*See*		
	Munna Creek, near Tiaro	..	*See* Nos. 391, 392.											
	Mount Thabor, near Warwick	..	,, Nos. 403, 403A.											
	Mount Toby, near Mackay	..	,, No. 331.											
	Nebo Coal	..	,, Nos. 333 and 334.											
	New Aberdare Coll., Ipswich Coalfield ..	..	,, Nos. 262, 263.											
	New Marathon Bore, near Hughenden ..	..	,, No. 245.											
	New Tivoli Coll., Ipswich Coalfield ..	..	,, No. 301.											
	Noosa—													
341	11 miles N.W. of, near Canning's Sel. 1176, and 5 miles N.E. of Cooran	*March,* Wide Bay	21.6		66.9	11.5	..	..	..	..	From bottom of shaft. Cokes. Ash, yellowish	1828	G.S.Q.P. **64**, p. 2 (1890)	W.H.R.
342	Ditto	,, ,,	21.4		69.1	9.5	..	..	..	..	Cokes. **Ash, white**	1828	G.S.Q.P. **64**, p. 2 (1890)	W.H.R.
	North Ipswich, Ipswich Coalfield ..	..	*See* Nos. 281-301.											
	Nundah Coll., near Brisbane	..	,, Nos. 40, 40A.											
	Oakbank Coll., Ipswich Coalfield	..	,, Nos. 266-270.											
	Oakey—													
343	About 12 miles N. of (at Balgowan, nr. Muldu Rail. Stn.)	*Aubigny,* D. Downs	4.9	34.5	44.6	16.0	..	6,911	12,439	..	Analyses made from two pieces of clean coal. Cokes fairly well.	1621A	Q.G.M.J., p. 158 (1912)	J.B.H.
344	Ditto (face of seam 1 ft. 9 in.)	,, ,,	4.9	33.0	40.5	21.6	..	6,435	11,583	..	Cokes. Exp. evap. power = 10	1621A	Q.G.M.J., p. 159 (1912)	J.B.H.
	Oakey Creek—													
345	Federal Coll.	*Aubigny,* D. Downs	4.1	40.2	41.7	14.0	..	6,815	12,267	..	Cokes slightly. Ash, white ..	1626	A.R., p. 111 (1907)	J.B.H.
	Oaklands, near Dalby	..	*See* Nos. 107-108.											
	Palm Tree Creek, near Helidon	..	,, No. 242.											
	Pascoe R.—													
348	Weymouth Bay, 240 miles N. of Cooktown	*Weymouth,* Cook	2.5	7.6	85.0	4.9	..	7, 15	14,247	..	..	1618	A.R., p. 11 (1905)	J.B.H.
349	Ditto	,, ,,	0.8	32.9	42.0	24.3	..	6,548	11,786	..	Sample in museum. Coke hard, compact	1618	O.R.	—
	Pelican Creek, Bowen River	..	*See* Nos. 22-25, 27.											
	Pine Creek, near Bundaberg	..	,, No. 48.											
	Port Clinton, N. of Rockhampton ..	..	,, Nos. 404, 405.											
	Prairie, near Hughenden	..	,, No. 245A.											
	Puckley's Creek, near Cooktown ..	..	,, Nos. 104, 105.											
	Queensland Coll., Burrum	..	,, Nos. 56-59 413.											
	Queensport, near Brisbane	..	,, No. 40B.											
	Rathdowney, near Beaudesert	..	,, Nos. 4c, 4d.											

Redbank Creek, near Tiaro	..	..	,, No. 393.											
Rhondda Coll., Ipswich Coalfield	..	..	,, No. 272.											
Roma—														
350	40 miles N. of	*Westgrove,* Leichhardt	9.6	38.2	42.7	9.5	..	6,918	12,452	..	..	1699A	A.R., p. 343 (1911)	J.B.H.
Rothwell-Haigh Coll., Ipswich Coalfield		..	,, Nos. 291-298.											
Sharer's Sel., near Dalby ..	..	..	,, Nos. 107-108.											
Speedwell Coll., Ipswich Coalfield	..	..	,, Nos. 310, 310A-D.											
Stanley, C.Q. Railway	..	..	,, No. 215.											
Stanwell—														
351	Friend's Well, at Bushley (Sel. 26v)	*Livingstone,* Port Curtis	11.7	44.2	41.0	3.1	..	7,098	12,776	..	Non-caking. A brown coal; good quality	1794	G.S.Q.P. 175, p. 8 (1902)	J.B.H.
352	Ditto	,, ,,	0.05	32.2	44.4	23.3	1.7	6,677	12,018	1.2	Non-caking. Ash, white ..	1794	G.S.Q.P. 131, p. 11 (1898)	S.B.J.S.
St. George Mine, Little River Coalfield	..	..	*See* No. 323.											
St. Helen's Creek, near Mackay ..	..	..	,, No. 332.											
Stewart's Creek, near Townsville	..	..	,, Nos. 401, 402.											
STYX RIVER COALFIELD—														
355	Broadsound, Waverley Cr. (15-in. seam at 98 ft.)	*Murchison,* Port Curtis	2.5	27.4	63.1	6.1	0.8	7,882	14,187	1.3	Slightly cokes. Ash, yellowish brown	1800	G.S.Q.P. 84, p. 8 (1892)	He.
356	Ditto (No. 1)	,, ,,	2.0	28.6	66.9	1.6	0.8	8,312	14,961	..	..	1800	G.S.Q.P. 84, p. 8 (1892)	R.M.
357	Ditto (No. 2)	,, ,,	1.5	26.2	66.0	5.6	0.7	7,999	14,398	..	..	1800	G.S.Q.P. 84, p. 8 (1892)	R.M.
358	Ditto	,, ,,	1.7	28.8	66.7	2.0	0.6	8,316	14,968	..	..	1800	G.S.Q.P. 84, p. 8 (1892)	W.H.R.
359	Ditto Thick Seam — Top Band	,, ,,	2.6	21.6	63.8	11.5	0.5	7,359	13,246	1.4	..	1800	G.S.Q.P. 84, p. 8 (1892)	He.
360	Ditto ,,	,, ,,	28.0		59.7	12.2	..	..	..	..	Coke is firm. Ash, white ..	1800	G.S.Q.P. 84, p. 8 (1892)	J.S.
361	Ditto Thick Seam—Middle and Bottom Band	,, ,,	2.1	24.2	62.4	10.0	0.6	7,505	13,509	1.3	..	1800	G.S.Q.P. 84, p. 8 (1892)	He
362	Ditto Thick Seam—Middle Band	,, ,,	30.3		60.1	9.5	..	..	..	..	Coke is firm. Ash, white ..	1800	G.S.Q.P. 84, p. 8 (1892)	J.S.
363	Ditto Thick Seam—Bottom Band	,, ,,	30.2		57.0	12.7	..	..	..	..	Coke is firm. Ash, white ..	1800	G.S.Q.P. 84, p. 8 (1892)	J.S.
364	Deep Creek Seam	,, ,,	1.9	28.3	64.5	4.4	0.8	8,086	14,554	1.3	Coal is hard and bright ..	1800	G.S.Q.P. 84 p. 8 (1892)	R.M.
365	Ditto	,, ,,	1.7	31.2	60.3	6.3	0.4	7,878	14,180	1.3	..	1800	G.S.Q.P. 84, p. 8 (1892)	W.H.R.
366	Styx River Co.'s Seam, Tooloombah Creek	,, ,,	2.1	29.7	62.6	5.6	..	8,071	14,527	1.3	Coal is firm; slightly cokes. Ash, light-yellow	1800	G.S.Q.P. 84, p. 8 (1892)	J.S.
367	Ditto	,, ,,	2.2	31.3	62.6	3.9	..	8,075	14,535	..	Coal firm; slightly cokes ..	1800	G.S.Q.P. 84, p. 8 (1892)	E.B.L.
368	Ditto	,, ,,	2.0	30.9	62.9	4.4	Nil	8,061	14,509	..	..	1800	G.S.Q.P. 84, p. 8 (1892)	F.W.M.
369	Ditto	,, ,,	1.3	30.0	64.9	3.4	0.2	8,214	14,785	..	..	1800	G.S.Q.P. 84, p. 8 (1892)	W.H.R.
Sugarloaf Coll., near Kingsthorpe	..	..	*See* No. 314.											
Swanbank Coll., Ipswich Coalfield	..	..	,, No. 273.											
TANNYMOREL—														
372	Coal Pit Gully, Farm Creek ..	*Merivale,* D. Downs	3.9	42.4	42.5	11.2	..	7,067	12,720	..	Burns with a long flame; cokes. Ash, pink	1631	A.R., p. 19 (1905)	J.B.H.
373	Ditto	,, ,,	4.1	38.5	42.1	15.3	..	6,896	12,412	..	Burns with a long flame; cokes. Ash, pink	1631	A.R., p. 23 (1905)	J.B.H.
374	Green's Well (No. 1)	,, ,,	3.5	44.6	43.9	8.0	..	7,368	13,262	..	..	1635	A.R., p. 53 (1906)	J.B.H.
375	Ditto (No. 2)	,, ,,	4.2	39.9	40.9	15.0	..	6,924	12,463	..	..	1635	A.R., p. 53 (1906)	J.B.H.
376	Ditto (No. 3)	,, ,,	4.2	33.7	30.3	31.8	..	5,670	10,206	..	..	1635	A.R., p. 53 (1906)	J.B.H.
377	Ditto (No. 4)	,, ,,	4.9	38.8	40.4	15.9	..	6,784	12,211	..	..	1635	A.R., p. 53 (1906)	J.B.H.
378	Tannymorel Coll.	,, ,,	5.1	41.2	43.9	9.8	..	7,079	12,742	..	Sample from railway truck ..	1634	A.R., p. 53 (1906)	J.B.H.
379	Tannymorel Coll.	*Merivale,* D. Downs	5.3	39.9	45.4	9.4	..	7,291	13,123	..	Sample from truck	1634A	A.R., p. 42 (1912)	J.B.H.
Tanyalba Creek, near Tiaro	..	..	*See* Nos. 386 to 389 inclus., and 395 to 398 inclus											

COAL.—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

Coal Table No.	POSITION.		PROXIMATE ANALYSIS, ETC.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names.*	Analyst.
			%	%	%	%	%					*See*		
Taylor—														
380	Taylor Siding Crow's Nest Rly...	*Aubigny,* D. Downs	5.2	28.4	36.5	29.9	..	5,814	10,465	..	..	1625B	A.R., p. 288 (1910)	J.B.H.
Thornborough—														
381	10 miles W by N. of, at Mt. Mulligan	*Hodgkinson,* Cook	2.7	26.3	58.6	12.4	..	7,405	13,329	..	Bulk sample supplied by proprs.	1612	A.R., p. 132 (1907)	J.B.H.
382	Ditto (7 ft. seam, No. 3 Jump-up), Adit 1	,, ,,	1.8	22.9	56.0	19.3	..	6,854	12,337	..	Non-coking. Ash, light-red. (*See* Ult. Analysis No. 445)	1612	G.S.Q.P. 222, p. 36 (1910)	J.B.H.
382A	Ditto No. 3 rise, Adit 1 ..	,, ,,	2.6	22.6	46.3	28.5	..	6,033	10,859	..	Non-coking in the crucible. Exp. evap. power = 9.0	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.B.H.
382B	Ditto No. 3 Jump-up, Adit 2	,, ,,	2.7	19.4	56.0	21.9	..	6,504	11,707	..	Non-coking in the crucible. Exp. evap. power = 9.9	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.B.H.
382C	Ditto No. 3 Jump-up, Adit 1	,, ,,	2.4	23.3	59.2	15.1	..	7,154	12,877	..	Non-coking in the crucible. Exp. evap. power = 11.3	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.B.H.
382D	Ditto ditto	,, ,,	2.4	20.2	50.8	26.6	..	6,160	11,088	..	Non-coking in the crucible. Exp. evap. power = 9.5	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.B.H.
382E	Ditto ditto	,, ,,	2.6	20.6	37.4	39.4	..	5,108	9,194	..	Non-coking in the crucible. Exp. evap. power = 7.3	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.B.H.
382F	Ditto ditto (average of 7 ft. seam)	,, ,,	2.8	22.7	56.1	18.4	..	6,842	12,315	..	Non-coking in the crucible. Exp. evap. power = 11.2	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.H.B.
382G	Ditto End, Adit 1 ..	,, ,,	2.4	33.1	56.8	7.7	..	7,773	13,991	..	Cokes. Exp. evap. power = 11.9	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.B.H.
382H	Ditto 20 ft. out from No. 3 Jump-up, Adit 1	,, ,,	2.3	21.0	49.7	27.0	..	6,150	11,070	..	Non-coking in the crucible. Exp. evap. power = 9.5	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.B.H.
382I	Ditto Full section, Adit 3	,, ,,	2.6	21.6	45.6	30.2	..	5,876	10,576	..	Non-coking. Exp. evap. power = 8.9	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.B.H.
382J	Ditto Splint, Adit 3 ..	,, ,,	1.5	20.0	40.0	38.1	..	5,260	9,468	..	Non-coking in the crucible. Exp. evap. power = 7.8	1612AI	G.S.Q.P. 237, p. 31 (1912)	J.B.H.
TIARO—														
383	Bull's Mine, Mt. Bopple	*March,* Wide Bay	1.2	3.3	90.9	4.6	..	7,837	14,106	..	Anthracite bands in shale ..	1826	G.S.Q.P. 203, p. 8 (1906)	—
384	Bull's Sel. (1357), 4 miles E.N.E. of Gunalda Rly. Stn.	,, ,,	7.0	8.6	68.4	16.0	..	6,692	12,045	1.5	Non-coking. Ash, grey ..	1822	G.S.Q.P. 59, p. 2 (1890)	—
385	Gunalda	,, ,,	1.0	9.2	75.8	14.0	..	7,373	13,271	..	Ash, grey	1823	A.R., p. 25 (1905)	J.B.H.
386	Jones's Sel. 1311, Tanyalba Cr., near Gundiah—No. 1 Seam	*Lennox* ,,	2.5	26.1	62 9	8.5	..	7,736	13,924	1.3	Non-coking. Ash, grey. (*See* also Nos. 395-398)	1820	G.S.Q.P. 59, p. 3 (1890)	—
387	Ditto No. 2 Seam ..	,, ,,	6.0	22.4	51.1	20.5	..	6,404	11,527	1.4	Non-coking. Ash, reddish ..	1820	G.S.Q.P. 59, p. 3 (1890)	—

388	Ditto No. 5 Seam ..	,,	,,	14.0	30.0	39.5	16.5	..	6,144	11,059	..	Ash, grey. Non-caking. Coal very soft	1820	G.S.Q.P. 59, p. 3	(1890)	—
389	Ditto Seam in hole	,,	,,	5.5	28.7	51.3	14.5	..	7,050	12,690	1·4	Ash, grey. Non-caking ..	1820	G.S.Q.P. 59, p. 3	(1890)	—
390	Miva Seam, Mary River	,,	,,	23.6		61.0	15.4	..	..	..	..	Cokes. Carbon in coke = 80%; Ash in coke = 20%. (Supposed to be identical with Munna Cr.)	1817	G.S.Q.P. 92, p. 305	(1892)	A.C.G.
391	Munna Cr. (1767)—Bottom Seam	,,	,,	5.0	29.0	48.5	17.5	..	6,852	12,333	1.5	Ash, reddish grey. Non-coking	1817	G.S.Q.P. 59, p. 2	(1890)	—
392	Ditto Top Seam ..	,,	,,	6.0	22.6	49.9	21.5	..	6,326	11,386	1.4	Ash, grey. Non-coking ..	1817	G.S.Q.P. 59, p. 2	(1890)	—
393	Redbank Cr., near Sel. No. 78 ..	,,	,,	10.0	28.0	47.5	14.5	..	6,671	12,007	1.5	Ash, reddish grey. Non-coking	1819	G.S.Q.P. 59, p. 5	(1890)	—
394	Sorenson's Sel. (1737), Tanyalba Creek	*March*	,,	12.0	34.2	32.8	21.0	..	5,922	10,659	..	Ash, white. Non-coking ..	1829	G.S.Q.P. 59, p. 4	(1890)	—
		..		*Syn.* Thomas's Mine and Jones's Selection, which *see.*												
395	Thomas's Mine, Tanyalba Cr., W. of Gundiah Rly. Stn.—Bottom Seam	*Lennox*	,,	4.4	22.8	54.4	18.4	..	6,713	12,083	..	Non-coking. Exp. evap. power = 11.58. (*See* also Nos. 386-389.)	1821	A.R., p. 51	(1906)	J.B.H.
396	Ditto Middle Seam ..	,,	,,	6.2	24.1	61.8	7.9	..	7,446	13,402	..	Non-coking. Exp. evap. power = 13.07	1821	A.R., p. 51	(1906)	J.B.H.
397	Ditto Top Seam ..	,,	,,	5.1	24.6	62.4	7.9	..	7,545	13,581	..	Non-coking. Exp. evap. power = 13.47	1821	A.R., p. 51	(1906)	J.B.H.
398	Ditto Seam not stated	,,	,,	0·8	23.4	59.6	16.2	..	7,197	12,954	..	..	1821	A.R., p .75	(1906)	J.B.H.
	Tingalpa, near Brisbane	..		*See* Nos. 31, 32, 33, and 41A.												
	Tivoli Mine, Ipswich Coalfield	..		,, No. 299.												
	Tolmie's Mines, C.Q. Railway	..		,, Nos. 216 to 219, inclus.												
	Torbanlea Seams, Burrum Coalfield ..	..		,, Nos. 51A, 52, 53 (?), 55, 60, 61, 62, and 63.												
	Torway Cr., near Caloundra	..		,, No. 42.												
	Townsville—															
401	Stewart's Creek	*Elphinstone,*	Nth. Kennedy	7.2	46.6	37.8	8.3	..	6,808	12,254	..	..	1642A	G.S.Q.P. 92, p. 172	(1892)	R.L.J.
402	Ditto	,,	,,	3.7	38.3	46.0	11.9	..	7,196	12,952	..	..	1642A	A.R., p. 3	(1905)	J.B.H.
	Tryphinia, C.Q. Railway	..		*See* Nos. 222 to 226, inclus., and 435 to 437, inclus.												
	Walker's Cr., W. of Mackay	..		,, No. 333.												
	Wallaroo Mines, C.Q. Railway	..		,, Nos. 222 to 226, inclus., and 435 to 437, inclus.												
	Walloon Coll., Ipswich Coalfield	..		,, No. 308.												
	Walloon	..		,, Nos. 306 to 308, inclus.												
	Warreah—															
402A	Blantyre Co.	*Woura,*	Mitchell	3.8	40.3	43.2	12.5	..	7,147	12,864	..	Cokes well	1709C	Unofficial	(1905)	McL.
402B	Ditto	,,	,,	7.4	39.7	43.5	9.2	1.0	7,118	12,812	..	..	1709C	E.O.M.	(1911)	W.W.D.
	Warwick—															
403	3 miles N.E. of, at Mount Thabor	*Merivale,*	D. Downs	5.5	32.8	35.7	26.0	..	6,025	10,845	..	Non-coking; non-caking. Ash, white. Exp. evap. power = 10.05	1633A	A.R., p. 281	(1910)	J.B.H.
403A	Ditto	,,	,,	3.8	37.7	37.9	20.6	..	6,481	11,665	..	..	1633C	A.R., p. 347	(1911)	J.B.H.
	Waterpark Creek—															
404	near Pt. Clinton—Valentine Cr. Shaft	*Palmerston,*	Port Curtis	10.2	41.3	38.8	9.6	1.1	6,672	12,009	..	Cokes. Ash, white	1801	G.S.Q.P. 174, p. 3	(1902)	J.B.H.
405	Ditto (Outcrop) ..	,,	,,	10.7	40.7	42.8	5.6	1.2	6,947	12,504	..	Cokes. Ash, white	1802	G.S.Q.P. 174, p. 3	(1902)	J.B.H.
	Waterstown Coll., Ipswich Coalfield ..	..		*See* No. 300.												
	Waterstown Mine, Ipswich Coalfield ..	..		,, No. 285.												
	Waverley Cr., Styx River Coalfield ..	..		,, Nos. 355-363.												
	Welcome Cr., near Cooktown	..		,, Nos. 95-100.												
	West's Mine, Ipswich Coalfield	..		,, Nos. 309, 309A, 309B, 309C, 309D, 309E.												
	Whitwood Coll., Ipswich Coalfield ..	..		,, No. 265.												

COAL.—GENERAL TABLE OF PROXIMATE ANALYSES.—*continued.*

Coal Table No.	POSITION.		PROXIMATE ANALYSIS, ETC.								REMARKS.	REFERENCES.		
	Locality.	*County* and District.	Moisture.	Volatile Hydro-Carbons	Fixed Carbon.	Ash.	Sulphur.	Calories.	British Thermal Units*	Specific Gravity.	Coke, Ash, &c.	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names*.	Analyst.
			%	%	%	%	%					*See*		
Winton—														
407	Government Well..	*Ayrshire,* Gregory Nth.	42.9		52.5	4.6	..	..	..	..	Coke is compact	1640	G.S.Q.P. 136, p. 42 (1898) Reprint of G.S.Q.P. 10 (1885)	R.L.J.
408	Ditto Sheppard's Well.. ..	,, ,,	49.3		30.3	20.3	..	..	..	..	Dull and distinctly laminated..	1641	G.S.Q.P. 136, p. 42 (1898)	R.L.J.
409	Ditto Well 3 miles S. of Werna, near Ayrshire Downs	*Wokingham,* Gregory Nth.	56.0		39.0	5.0	..	..	..	..	Thin seam	1642	G.S.Q.P. 136, p. 42 (1898)	R.L.J.
	Yahmahnto, Ipswich Coalfield	..	*See* Nos. 309 to 310D, inclus.											
	Yandaran, near Bundaberg	..	,, No. 49.											
Yarraman—														
410	3 miles E. by N. of (por. 84v, par. Cooyar)	*Cavendish,* Moreton.	7.3	24.4	46.8	21.5	..	6,254	11,257	..	Exp. evap. power = 9.4 ..	1720A	A.R., p. 366 (1911)	J.B.H.

* NOTE.—Calories and British Thermal Unit values, given in the preceding Table of Proximate Analyses are based on Goutal's Formula:—$P = \frac{8150\,C + AM}{100}$; P = Calories, C = Percentage of fixed carbon; M = Percentage of Hydrocarbons; A = Coefficient depending on M; thus, if M = 2 to 15, then A = 13000; if M = 15 to 30 then A = 10000; if M = 30 to 35 then A = 9500; if M = 35 to 40 then A = 9000. It is found, however, that these theoretical results, in many cases, exceed the results obtained by practical experiments. *British Thermal Unit* (B.T.U.) = 1·8 Calories. *Evaporative Power* (Evap. Pow.) = $\frac{\text{B.T.U.}}{965{\cdot}7} = \frac{\text{Calories}}{557}$.

COAL.—SUMMARY TABLE OF PROXIMATE ANALYSES.

Productive Coal-bearing Areas.	Moisture.		Volatile Hydro-Carbons.		Fixed Carbon.		Ash.		Estimated Calories (Mean).	Coking Qualities.	Character of Ash.	Principal References.
	Mean.	Range.	Mean.	Range.	Mean.	Range.	Mean.	Range.				
	%	%	%	%	%	%	%	%				
1 Beaudesert..	5.0	8–2	33.0	40–13	45.0	58–13	17.0	25–11	6,802	Slightly cokes ..	Pink	G.S.Q. Pubs. 51 (1889), 225 (1910)
2. Burrum	2.0	3–0.1	27.0	31–24	66.0	68–62	5.0	8–4	8,079	Firm coke	Grey-reddish	G.S.Q. Pub. 170
3. Callide Creek	7.5	12–0.8	26.5	28–23	54.0	59–41	12.0	20–4	7,051	Non-coking	White, gritty	G.S.Q. Pub. 80, p. 3 (1891)
4. Chinchilla*..	..	..	..	..	..	..	..	..	..	..	..	G.S.Q. Pub. 235 (1911)
5. Clermont	4.5	5–0.8	32.0	57–21	57.5	62–53	6.0	10–4	7,726	Partly coking ..	White ..	G.S.Q. Pub. 148 (1900)
6. Cooktown	2.5	8–0.3	24.0	30–19	59.5	72–34	14.0	26–8	7,249	Non-coking	Red	G.S.Q. Pubs. 35 (1887), 70 (1891), 180 (1902), 222 (1910)
7. Dalby	5.4	6–5	39.6	40–39	42.5	42–41	12.5	12–13	7,027	Some seams coke ..	White-reddish	Q.G.M.J. (1910)
8. Dawson River	1.3	3–1	9.5	14–6	80.1	86–74	8.9	17–4	7,763	Parts slightly coke..	Brown ..	G.S.Q. Pub. 155 (1901). Q.G.M.J. (1905)
9. Hughenden	9.5	15–7	31.0	32–18	50.5	51–34	9.0	31–8	7,060	Slightly cokes ..	White ..	G.S.Q. Pub. 44 (1888). Q.G.M.J. (1909)
10. Ipswich	1.5	2–0.7	27.0	33–21	58.5	72–50	14.0	21–4	7,467	Some seams coke ..	Light grey	G.S.Q. Pub. 92 (1892)
11. Ditto Walloon	6.0	8–4	39.0	40–23	44.0	48–29	11.0	25–6	7,096	Cokes	Greyish	G.S.Q. Pubs. 147 (1899), 204 (1906)
12. Little River..	1.5	3–1	11.5	26–6	75.0	83–58	12.0	17–6	7,607	Non-coking	..	G.S.Q. Pubs. 91 (1893), 92 (1892)
13. Mackenzie R., Central Rail,	1.5	3–0.4	14.0	24–7	77.0	81–43	7.5	29–5	8,095	Slightly cokes ..	Brown ..	G.S.Q. Pub. 155 (1910). Q.G.M.J. (1904-5)
14. Mount Mulligan	2.5	..	24.5	..	57.0	..	16.0	..	7,095	Non-coking	Reddish ..	G.S.Q. Pub. 222 (1910)
15. Nebo (Bee and Walker Crs.)	3.0	3–2.5	10.5	12–8	73.0	84–61	13.5	16–3	7,314	Non-coking	White ..	G.S.Q. Pub. 39 (1887)
16. Nundah—Eagle Farm ..	1.5	9–0.6	28.5	35–21	51.0	55–39	19.0	26–19	7,006	Cokes well	Grey ..	G.S.Q. Pub. 225 (1910)
17. Styx River..	2.0	2–1	29.0	31–22	63.0	64–59	6.0	12–3	8,034	Firm, bright coke ..	White ..	G.S.Q. Pub. 84 (1892)
18. Tiaro	4.4	12–10	20.0	34–3	61.8	90–39	13.8	21–4	7,036	Sometimes slightly cokes	Grey ; white	G.S.Q. Pub. 59 (1890)
19. Toowoomba	4.5	3–5	38.0	40–36	41.0	42.6–40	16.5	17–14	..	Some seams coke ..	..	No reports published.
20. Warwick	4.5	5–4	41.0	44–39	40.5	44–37	14.0	16–9	6,785	Some seams coke ..	Grey ..	G.S.Q. Pub. 92 (1892)
21. Waterpark Creek	10.5	10.7–10.2	41.0	41.5–40	41.0	43–39	7.5	10–6	6,832	Non-coking	White ..	G.S.Q. Pub. 174 (1902)

* No reliable analyses.

NOTE.—Many other areas exist in the State, but up to the present there is no evidence of their being "actually" or "probably" productive.

COAL—ULTIMATE ANALYSES.

Coal Table No.	POSITION.	ULTIMATE ANALYSIS.										REMARKS.	REFERENCES.		
	Locality.	Moisture.	Carbon.	Hydrogen.	Nitrogen.	Sulphur.	Ash.	Oxygen.	Calories.	British Thermal Units.	Exp. Evap. Power.	—	General Index No.	Publications, &c. *See under* "Abbreviations" *for Titles and Names.*	Analyst.
		%	%	%	%	%	%	%							
411	Allora (1 mile W. of). *Co.* Merivale; *Dist.* D. Downs	3.9	69.3	6.1	†11.5	0.3	8.9	..	..	..	..	..	*See* 1629	"Q'land,", by Daintree (1873) p. 79	—
413	Burrum, Q'land Coll. Co., No. 5 Pit. *Co.* Cook; *Dist.* Wide Bay	2.3	75.7	4.6	0.7	0.5	7.4	8.5	7,611	13,700	14.1	(*See* Prox. Analysis No. 57A) ..	1805	A.R., p. 236 (1910)	J.B.H.
414	Callide Cr. *Co.* Raglan; *Dist.* Pt. Curtis	..	76.8	4.7	1.8	0.2	1.2	15.1	5,720	..	10.2	Vol. Hyd. Carb.—41.8. (*See* Prox. Analyses Nos. 68-72.)	1803	O.R.	—
415	Cooktown, Deighton R., 12 miles S. of Welcome Cr. Rail. Stn. *Co.* Banks; *Dist.* Cook	0.7	76.3	4.7	1.1	2.7	11.1	3.3	..	..	13.8	(*See* Prox. Analysis No. 102A ..	1603	G.S.Q.P. 222, p. 12 (1910)	J.B.H.
415A	Ditto	6.5	68.1	3.7	0.9	0.4	8.3	11.8	..	..	11.4	(*See* Prox. Analysis No. 102B) ..	1603	A.R., p. 175 (1909)	J.B.H.
DAWSON-MACKENZIE—															
416	Bluff Coll., C.Q.R.* *Co.* Humboldt; *Dist.* Leichhardt	1.4	81.0	4.0	1.8	0.7	10.9	1.6	7,872	14,169	14.7	Harbour Board Test. (*See* Prox. Analysis No. 117.)	1685	A.R., p. 10 (1905)	J.B.H
417	Ditto	1.3	81.9	3.9	2.1	0.7	9.4	2.0	7,890	14,201	14.7	Harbour Board Test. (*See* Prox. Analysis No. 118.)	1685	A.R., p. 10 (1905)	J.B.H.
418	Ditto	1.3	78.4	3.6	1.7	0.6	14.3	1.4	7,533	13,558	14.0	Harbour Board Test. (*See* Prox. Analysis No. 119.)	1685	A.R., p. 10 (1905)	J.B.H.
419	Ditto	1.3	79.3	3.6	2.0	0.8	12.7	1.6	7,692	13,847	14.3	Harbour Board Test. (*See* Prox. Analysis No. 120.)	1685	A.R., p. 10 (1905)	J.B.H.
422	Dawson Co.'s Mine.* *Co.* Kimberley; *Dist.* Leichhardt	..	88.2	3.8	1.7	0.4	5.7	..	..	..	..	No. 4 Bore, 265 ft. (*See* Prox. Analysis No. 152.)	1691	Inf. supplied by Secty. ..	J.B.H.
425	Dunstan Co.'s Dawson R. outcrop.* *Co.* Ferguson; *Dist.* Leichhardt	2.5	80.8	3.8	1.8	Trace	5.4	5.5	..	..	..	(*See* Prox. Analysis No. 174) ..	1692	O.R.	—
428	Frenchman's Plains, near Blackwater, C.Q.R.* *Co.* Humboldt; *Dist.* Leichhardt	1.3	76.3	4.0	1.9	0.6	9.1	6.7	..	..	13.66	(*See* Prox. Analysis No. 195) ..	1689	L.B. 8, p. 559 (1904)	J.B.H.
430	Jellinbah (Mackenzie R.).* *Co.* Leura; *Dist.* Leichhardt	1.6	81.0	4.5	1.8	0.6	8.7	3.4	7,991	14,383	14.9	Harbour Board Test. (*See* Prox. Analysis No. 206.)	1696	A.R., p. 10 (1905)	J.B.H.
431	Ditto	1.7	79.0	4.3	1.5	1.0	11.3	2.9	7,783	14,011	14.5	Harbour Board Test. (*See* Prox. Analysis No. 207.)	1696	A.R., p. 10 (1905)	J.B.H.
432	Ditto	1.9	78.7	4.1	1.5	0.8	11.4	3.5	7,670	13,807	14.3	Harbour Board Test. (*See* Prox. Analysis No. 208.)	1696	A.R., p. 10 (1905)	J.B.H.
435	Wallaroo Mines, near Tryphinia Rail. Stn.* *Co.* Kimberley; *Dist.* Leichhardt	1.5	81.1	3.9	1.6	0.5	9.8	3.1	7,808	14,055	14.6	Harbour Board Test. (*See* Prox. Analysis No. 225.)	1694	A.R., p. 10 (1905)	J.B.H.
436	Ditto	1.5	82.1	3.8	1.7	0.7	9.6	2.1	7,880	14,183	14.7	Harbour Board Test. (*See* Prox. Analysis No. 226.)	1694	A.R., p. 10 (1905)	J.B.H.
437	Ditto (second sample ..	1.7	80.3	3.1	1.8	0.6	8.2	4.3	..	..	..	(*See* Prox. Analysis No. 224) ..	1694	O.R.	—
Aberdare Seam—															
440	*Co.* Stanley; *Dist.* Moreton ..	1.9	59.7	4.3	†9.6	0.2	24.2	..	..	..	..	(*See* Prox. Analyses Nos. 249-253)	1729	"Queensland," by Daintree (1873), p. 77	—
Tivoli Seam—															
443	*Co.* Stanley; *Dist.* Moreton ..	1.1	79.0	5.2	†6.6	0.4	7.7	..	..	..	..	(*See* Prox. Analyses Nos. 300, 301)	1753	"Queensland," by Daintree (1873), p. 78	—
Mt. Mulligan—															
445	10 miles W. by N. of Thornborough. *Co.* Hodgkinson; *Dist.* Cook	1.8	63.4	3.7	1.1	0.3	19.2	10.1	..	..	10.8	(*See* Prox. Analysis No. 382) ..	1612	G.S.Q.P. 222, p. 36 (1910)	J.B.H.

* Analyses calculated on coal dried at 100 degs. Cent.

† Iucluding oxygen.

Coal Areas at Bribie Island. *See under* Government Mining Journal, Report No. 86.

Coal Bores. References very incomplete—

Aldershot Bore. At Aldershot Works, nr. Rail. Stn. *Co.* March; *Dist.* Wide Bay. Coal seams are known in the neighbourhood, but only coal bands were met with in the bore, one band at 650 ft., another at 801 ft. *Ref.* B.D. (1912). Other bores mentioned under Saltwater.

Archerfield Bores—

(1) On *Por.* 364, *Par.* Oxley, *Co.* Stanley, *Dist.* Moreton. About 2¾ miles S.S.E. of Darra Rail. Station.

(2) On *Por.* 47, *Par.* Woogaroo, *Co.* Stanley, *Dist.* Moreton. About 6 miles S.S.E. of Darra Rail. Station. Other bores were sunk, but records are not obtainable. *Ref.* G.S.Q. Pub. 225, pp. 37, 38 (1910).

Beaudesert Bores. Gould and Waters' Sels. Parish of Logan; 1½ miles N. of Beaudesert. Depth 450 and 400 ft. respectively. No. 1 Bore (Gould's) cut three seams at 130, 170, and 220 ft. of 1 ft. 5 in., 2 ft. 8 in., and 5 ft. 2 in. thick, respectively. No. 2 Bore (Waters') cut three seams of coaly shale between 333 and 359 ft. *Min.Ref.* Coal, *see* 1779A, 1781. *Ref.* A.R.D.M., p. 210 (1912).

Bellert's Bore. About 330 ft. S. of Bellert's Shaft, and about 3 miles N.E. of Torbanlea Rail. Stn., Burrum Coalfield. *Por.* 3, *Par.* Vernon, *Co.* March, *Dist.* Wide Bay. Coal was found at 109 ft. Seam averages 3 ft. thick. *Min.Ref.* Coal, *see* 1830A. *Ref.* Q.G.M. Jour., p. 342 (1900).

Bimerah Bore. *See under* Artesian Bores and Notes. No. 167 (2).

Black Rock Creek Coal Syndicate's Bores. East of Black Rock Creek and about 35 miles W.N.W. of Mackay. *Par.* St. Helens, *Co.* Carlisle, *Dist.* South Kennedy. Bores 1 to 3 are on *Por.* 1450, and Nos. 4 and 5 bores are about ½-mile E. of *Por.* 1450. Depths, 100 ft. to 350 ft. 3-ft. seam of coal met in No. 2 Bore. *Ref.* G.S.Q. Pub. 229, p. 43 (1910).

Blantyre Bore. *See under* Warreah Bore.

Bowen River Bore. Sixty miles S.W. of Bowen. Depth 340 ft. Struck Daintree coal seam. *See also* Pelican Bore. *Ref.* G.S.Q. Pub. 22, *also* C.A. Paper "Boring Operations at Coalfields, Bowen," 24th Nov., 1886.

Bribie View Bore (508 ft.). On mainland W. of Bribie Island. *Por.* 28, *Par.* of Toorbul, *Co.* Canning, *Dist.* Moreton. Coal seams were not found, although bore sunk in Coal Measures. Sandstones with one or two thin seams of hard black sandy shales and pebbly conglomerates occur near the bottom. *Ref.* A.R.D.M., p. 172 (1908).

Broadwater Bridge Bore, ½-mile S.W. of. *Por.* 352, *Par.* Bulimba, *Co.* Stanley, *Dist.* Moreton. No depth stated. *Ref.* G.S.Q. Pub. 225, p. 25 (1910).

Bundamba (including Blackstone) Bores (5). *Por.* 174, *Par.* Goodna, and *Pors.* 149, 150, 226, and 229, *Par.* Ipswich, *Co.* Stanley, *Dist.* Moreton. *See Note* Ipswich Coalfield *under* Coal Bores. *Ref.* G.S.Q. Pub. 108, pp. 19 and 22 (1895).

Burncluith Bore No. 1, 6½ miles N. of Chinchilla. *Por.* 93, *Par.* Colamba, *Co.* Lytton, *Dist.* Darling Downs. At 152 ft. there is good coal; at 180 ft., 14 ft. of bright coal; bottom of bore at 214 ft. *Min.Ref.* Coal, *see* 1627. *Ref.* O.R.

Burpengary (Helensburgh) Bore. 20 yds. from J. Bancroft's House, *Por.* 95, *Par.* Burpengary, *Co.* Stanley, *Dist.* Moreton. Sunk for coal in 1886. Depth and results unobtainable. *Ref.* B.D.

Burrum Bores. *See* Bellert's, Colton, Goodwood, Howard, Queensland Collieries Co.'s, Riverbank, Saltwater, and Torbanlea Bores.

Coal Bores—*continued:*

Bushley Bore (Friend's Sel. 26v), Bushley Rail. Stn., 6 miles S.W. of Stanwell Rail. Stn. *Co.* Livingstone; *Dist.* Pt. Curtis. *Min.Ref.* Coal, *see* 1794. *Ref.* G.S.Q. Pubs. 131, p. 11 (1898), and 175, p. 8 (1902).

Canobie Bore. *See under* Artesian Bores and Notes. No. 200.

Charlotte Plains (Cunnamulla) Bore. *See under* Artesian Bores and Notes. No. 206.

—— —— (Richmond) Bore. *See under* Artesian Bores and Notes. No. 207 (8).

Colton (Maryborough and Burrum Co.'s) Bores (27 hand bores and 2 diamond-drill bores). Burrum Coalfield, in *Par.* of Ferguson, *Co.* Lennox; *Par.* Walsh, *Co.* Cook; *Par.* Vernon, *Co.* March; *Dist.* Wide Bay. *Min.Ref.* Coal, *see* 1830B. *Ref.* G.S.Q. Pub. 170, pp. 18, 25 (1901), which gives details of all the bores sunk.

Couldery Bore (Ageston). Sel. (2) (W. H. Couldery), 3 miles E. of Alberton, 8 miles E. of Bethania Junction (South Coast line). *Co.* Ward; *Dist.* Moreton. *Min.Ref.* Coal, *see* 1777E. *Ref.* G.S.Q. Pub. 51, p. 2 (1889).

Dalby Bore (300 ft. deep), at Railway Cattle Yards, ¾-mile W. of Dalby Railway Station. *Par.* Dalby, *Co.* Aubigny, *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 143, p. 20 (1898). *See also under* Artesian Bores and Notes. No. 73.

Darr River Downs Bore. *See under* Artesian Bores and Notes. No. 245.

Dawson R. Bores. *See* Dawson R. Anthracite Coal Co.'s Bores (7), and Dunstan Coal Co.'s Bores (7). (Several bores have been sunk of which no records are available.)

Dawson R. Anthracite Co.'s Bores (7), Dawson R. 6 bores in *Co.* Ferguson, *Dist.* Leichhardt; 1 bore in *Co.* Kimberley, *Dist.* Leichhardt. *Min.Ref.* Coal, *see* 1691, 1692. *Ref.* Q.G.M. Jour., vol. 6, p. 15 (1905).

Dinmore Bores. *See* New Chum and Whitwood Bores.

Downman's (Mona Park) Bores, about 1½ mile N. of Logan Village Rail. Stn. Bore (1887), *Por.* 68 (?) [63], *Par.* Mackenzie, depth 291 ft. (Calyx), and Bore (1909), *Por.* 67, *Par.* Mackenzie, *Co.* Stanley, *Dist.* Moreton, depth 450 ft. (Diamond-drill). *See also* Mona Park Bores. *Min.Ref.* Coal, *see* 1763. *Ref.* G.S.Q. Pub. 36, p. 3 (1887), and G.S.Q. Pub. 225, pp. 14, 15, 19, 20 (1910).

Duaringa Bore. *Co.* Kimberley; *Dist.* Leichhardt. *Min.Ref.* Coal, *see* 1693. *Ref.* G.S.Q. Pubs. 155, p. 20 (1901), 159, p. 16 (1901.)

Dunstan Coal Co.'s Bores (7), Dawson R., 35 miles S. of Boolburra Rail. Stn. (Central line). *Co.* Ferguson; *Dist.* Leichhardt. *Min.Ref.* Coal, *see* 1692. *Ref.* Q.G.M. Jour., vol. vi., pp. 14, 15 (1905).

Eagle Farm Racecourse Bore, near Brisbane. *Par.* Toombul, *Co.* Stanley, *Dist.* Moreton. (Bore was sunk for artesian water to a depth of 1,781 ft. 6 in., and a 5-ft. seam of coal was struck at 791 ft.). *Min.Ref.* Coal, *see* 1762. *Ref.* G.S.Q. Pub. 225, pp. 32-34 (1910).

Eshelby's Bore. *Por.* 212, *Par.* Mackenzie, *Co.* Stanley, *Dist.* Moreton. Depth, 450 ft. (Jumper. *Ref.* G.S.Q. Pub. 225, p. 14 (1910).

Glenalvon Coal and Gas Bore, nr. Rosewood. *See* Glenalvon Bore *under* Gas Bores for position and note.

Goodwood Bore, Burrum Coalfield. *Par.* Isis, *Co.* Cook, *Dist.* Wide Bay. *Min.Ref.* Coal, *see* 1812. *Ref.* G.S.Q. Pub. 170, pp. 17, 20 (1901).

Heussler's Shaft and Bore, about 1 mile S.E. of Mt. Petrie. *Por.* 357, *Par.* Tingalpa, *Co.* Stanley; *Dist.* Moreton. *Min.Ref.* Coal, *see* 1773B. *Ref.* G.S.Q. Pub. 225, p. 26 (1910).

Howard Bores, Burrum Coalfield. *Par.* Burrum, *Co.* Cook, *Dist.* Wide Bay. *Min.Ref.* Coal, *see* 1809. *Ref.* G.S.Q. Pub. 170, pp. 17, 20, 21 (1901). *Also* Geol. Surv. Office Letter-book 12 (1910), p. 658, for bore on Q'land

Coal Bores—*continued:*

Colliery's Property. Depth 1,500 ft. Another bore, 800 ft. deep, was sunk afterwards at the S.E. corner of Por. 23 by the Queensland Coal Co., Ltd., who have the records. The last bore was sunk by the Howard Coal Syndicate in the middle of por. 32, and close to a shaft, the positions being 2¾ miles N.N.W. of Howard Rail. Stn. Depth 369 ft., with 1 ft. of coal at 172 ft. (1912.) *Ref.* B.D.

Ipswich Coalfield Bores. *See* Bundamba Bores (including Blackstone), New Chum Colliery Bore (Dinmore), Whitwood Colliery Bore (Dinmore). There has been a large number of bores sunk in this district, other than those mentioned above, but no records are available. The district comprises Blackstone, Bundamba, Dinmore, Goodna, Moggil, North Ipswich, Purga, Redbank Plains, Rosewood, Tivoli, Walloon, Waterstown, and Yahmahnto.

Isis River Bores, Burrum Coalfield. (1) On Sel. 1091, depth 500 ft.; no coal. (2) On Sel. 1090, depth greater than 225 ft.; seam of coal (10 in.) at 140 feet. *Min.Ref.* Coal, *see* 1813. *Ref.* G.S.Q. Pub. No. 32, p. 67 (1886).

Kelly's Bores, about ¾-mile S.E. of Murarrie Rail. Stn. *Por.* 50, *Par.* Tingalpa (no record of depth), and *Por.* 51, *Par.* Tingalpa, *Co.* Stanley, *Dist.* Moreton. Depth, 200 ft. (?). *Ref.* G.S.Q. Pub. 225, pp. 28, 29 (1910).

Kynuna Bore. *See under* Artesian Bores and Notes. No. 306 (5).

Laidley Bore, S. of Laidley Rail. Stn. *Co.* Churchill; *Dist.* Moreton. In sinking for water a 6-ft. seam of coal was met with at 1,700 ft. depth. *Min.Ref.* Coal, *see* 1723A. *Ref.* G.S.Q. Pub. 92, p. 323 (1892).

Lindum Mere Bore, about ½-mile S.E. of Lindum Rail. Stn. *Por.* 129, *Par.* Tingalpa, *Co.* Stanley, *Dist.* Moreton. Depth, 1,060 ft. *Ref.* G.S.Q. Pubs. 143, p. 8 (1897), and 225, p. 32 (1910). *See also under* Artesian Bores and Notes. No. 182.

Logan Village Bore, 3½ miles S. of Logan Village. *Por.* 356, *Par.* of Moffatt, *Co.* Ward, *Dist.* Moreton. Depth, 250 ft. *Ref.* G.S.Q. Pub. 225, p. 23 (1910). *See also under* Downman's, Mona Park, and Timber Reserve.

Malula Bore. *See under* Artesian Bores and Notes. No. 321.

Maria Cr. Bore, 4 miles W. of Tolmie's Rail. Stn. *Co.* Humboldt; *Dist.* Leichhardt. *Ref.* G.S.Q. Pubs. 155, pp. 17, 18 (1901), 159, p. 19 (1901). *See also under* Artesian Bores and Notes. No. 66.

Mitchell Bore. *See under* Artesian Bores and Notes. No. 37.

Mona Park Bores, about 1½ mile N. of Logan Village Rail. Stn. *Pors.* 63 and 64, *Par.* of Mackenzie, *Co.* Stanley, *Dist.* Moreton. Depth, 500 ft. and 363 ft. respectively (1908). *See also* Downman's Bores. *Min.Ref.* Coal, *see* 1777B. *Ref.* G.S.Q. Pub. 225, pp. 15-18 (1910).

Mt. Morgan Co.'s Bores (2), on branch of Stony Creek, 2½ miles S. of Stanwell. *Par.* Stanwell, *Co.* Livingstone, *Dist.* Pt. Curtis. *Ref.* G.S.Q. Pub. 131, p. 11 (1898).

Mt. Petrie (about 2 miles E. of). *Pors.* 344 and 345, *Par.* Tingalpa, *Co.* Stanley, *Dist.* Moreton. No record of depth. *Ref.* G.S.Q. Pub. 225, p. 26 (1910).

Muttaburra Bore, 65 miles N.N.E. of Longreach Rail. Stn. (Central line). *Co.* Cumberland; *Dist.* Mitchell. Bore is artesian. Lignite was struck at depth of 2,700 ft. *Ref.* B.D.

New Chum Colliery Bore (from bottom of No. 3 Shaft), about 1 mile S.W. of Dinmore Rail. Stn. *Por.* 266, *Par.* Goodna, *Co.* Stanley, *Dist.* Moreton. *Min.Ref.* Coal, *see* 1736. *Ref.* G.S.Q. Pub. No. 204, p. 19 (1907).

Coal Bores—*continued:*

New Marathon Bore (Bradbury's), near Hughenden Rail. Stn. *Co.* Douglas; *Dist.* Burke. (Bore sunk for water, and coal struck somewhere between 1,500 and 1,600 feet. *Ref.* L.B. 4, p. 938.

North Queensland Collieries Co.'s Bores. Bores No. 1 and No. 2 (Stewart's Creek), about 7 miles S.E. of Townsville. *Por.* 150, *Par.* Stuart, *Co.* Elphinstone, *Dist.* North Kennedy. Depth, 259 ft. and 233 ft. 6 in. respectively. Bore No. 3 (Antill Plains), about 13 miles S.E. of Townsville. *Par.* Beor, *Co.* Elphinstone, *Dist.* North Kennedy. Depth (?). *Min.Ref.* Coal, *see* 1642A. *Ref.* G.S.Q. Pub. 196, pp. 18-21 (1905).

Nundah Bores. No. 1 Bore in Sports Reserve, near Nundah Rail. Stn. Depth, 223 ft. No. 2 Bore. *Por.* 353, about ½-mile W.S.W. of Nundah Rail. Stn. Depth, 377 ft. *Par.* Toombul, *Co.* Stanley, *Dist.* Moreton. *Min.Ref.* Coal, *see* 1770, 1771. *Ref.* A.R.D.M., 1910, p. 191.

Pelican Creek Bore, Bowen River, 60 miles S.W. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. Depth, 400 ft. Struck Garrick 5-ft. seam at 70 ft., but coal damaged by intrusion of volcanic rock. Other seams were penetrated, but are also burnt. *Ref.* G.S.Q. Pubs. 22, p. 55 (1885), 31, p. 46 (1886).

Petersen's Bore, Quarry Cr., 2 miles S. of Stanwell Rail. Stn. *Por.* Stanwell, *Co.* Livingstone, *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 10 (1898).

Quarry Cr. (Syndicate) Bore, junction with Neerkol Cr., Stanwell. *Par.* Stanwell, *Co.* Livingstone, *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 10 (1898).

Queensland Anthracite Co.'s Bore, 1½ mile W.S.W. of Wallaroo Rail. Stn., 74½ miles (by rail and road) W. of Rockhampton. *Co.* Kimberley; *Dist.* Leichhardt. Depth, 1,083 ft. *Ref.* Q.G.M. Jour., vol. vi., p. 15 (1905).

Queensland Collieries Co.'s Bore, 1 chain N.E. of the Company's B Pit (No. 14), Burrum Coalfield. *Par.* Burrum, *Co.* Cook, *Dist.* Wide Bay. Depth, 1,500 ft. *Ref.* L.B. 12, pp. 658, 659.

Queensport Meatworks Bore. *Por.* 17, *Par.* Bulimba, *Co.* Stanley, *Dist.* Moreton. Depth, 50 ft. *Ref.* G.S.Q. Pub. 225, p. 30 (1910).

Racecourse (Eagle Farm) Bore. *See under* Artesian Bores and Notes. No. 9.

Riverbank Bores, Burrum River. Walsh's No. 1 10 chains E. of Burrum Rail. Stn. *Depth* 727 ft. Several small coal seams passed through (1913). Walsh's No. 2, 20 (?) chains S.E. of Burrum Rail. Stn. *Depth* 427 ft. Small coal seams passed through 1913. *Ref.* B.D.

Roma No. 2 Bore. *See under* Artesian Bores and Notes. No. 46.

Rosedale Bore. *See under* Artesian Bores and Notes. No. 318 (2).

Saltwater Bores, Aldershot, Burrum Coalfield. Eleven bores. *Par.* Maryborough, *Co.* March, *Dist.* Wide Bay. Five bores. *Par.* Walliebum, *Co.* March, *Dist.* Wide Bay. *Min.Ref.* Coal, *see* 1830C. *Ref.* G.S.Q. Pub. 170, pp. 18, 25, 26 (1901).

Sanderson's Bore, Stony Cr. (Sel. 14A), 2 miles S.S.W. of Stanwell. *Par.* Stanwell, *Co.* Livingstone, *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, pp. 10, 11 (1898).

Scrubby Creek (Kingston) Bores, nr. Kingston Rail. Stn. Ten bore holes. Depths varying from 15 ft. to 48 ft. *Pors.* 266, 257, 252, *Par.* Mackenzie. *Por.* 227A, *Par.* Yeerongpilly, *Co.* Stanley, *Dist.* Moreton. *Ref.* G.S.Q. Pub. 225, pp. 12, 13 (1910).

Shallow Bore (nr. Townley Bores, Stewart's Creek), about 5 miles S.E. of Townsville. *Por.* 122V, *Par.* Stuart, *Co.* Elphinstone, *Dist.* North Kennedy. Depth, 10 ft. (?). *Min.Ref.* Coal, *see* 1642A. *Ref.* G.S.Q. Pub. 196, pp. 18-21 (1905).

Coal Bores—*continued:*

Simpson and Rodger's Bore, Stewart's Cr., about 5 miles S.E. of Townsville. *Por.* 99, *Par.* Stuart; *Co.* Elphinstone; *Dist.* North Kennedy. Depth, 50 ft. (abandoned). *Ref.* G.S.Q. Pub. 196, pp. 18-21 (1905).

Stanwell Bores (1) Sanderson's and other bores, *see* G.S.Q.P. No. 131 and diagrams. *See also under* Artesian Bores and Notes, No. 65 (2). On Sel. 5A, near old farm house, Glen Lamond, Stanwell. *Depth* 818 ft. Several bands of coal of the Walloon type (gassy) were passed through, but none sufficiently thick to pay for working. *Ref.* B.D. *See also under* Bushley *and* Wood End.

Stewart's Creek Bores, about 6 miles S.E. of Townsville. *See* North Queensland Collieries Co. Bores, Townley Coal Co. Bores, Twaddles Bores, Shallow Bore near Townley's, Simpson and Rodger's Bore. *Also* North Queensland Collieries Co. Bore (Antill Plains).

Timber Reserve Bore, ½-mile N. of Buccan Rail. Stn., and 2 miles N.E. of Logan Village Rail. Stn. *Par.* Moffatt, *Co.* Ward, *Dist.* Moreton. Depth, 347 ft. *Min.Ref.* Coal, *see* 1782. *Ref.* G.S.Q. Pubs. 51, p. 3 (1889), and 225, pp. 20-22 (1910).

Tingalpa. *See under* Heussler's and Mt. Petrie Bores.

Tolmie's Bore. Tolmie's Rail. Stn., 129 miles (by rail) W.byS. of Rockhampton. *Co.* Humbolt; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, pp. 18-20 (1901).

Torbanlea Bores. Burrum Coalfield. *Par.* Walsh, *Co.* Cook, *Dist.* Wide Bay. *Min.Ref.* Coal, *see* 1809. *Ref.* G.S.Q. Pub. 170, pp. 18, 22-24 (1901), and B.D.

Torbanlea Government Bore. Burrum Coalfield, 2 miles E. of Torbanlea Rail. Stn., *Par.* Vernon, *Co.* March, *Dist.* Wide Bay. *Ref.* B.D. *See also* Bellert's Bore.

Townley Coal Company's Bores. Bores Nos. 1 and 2 (Stewart's Cr.), about 6 miles S.E. of Townsville, on Reserve south of *Por.* 100, *Par.* Stuart, *Co.* Elphinstone, *Dist.* North Kennedy. Depth, 74 ft. and 100 ft. (abandoned) respectively. *Min.Ref.* Coal, *see* 1642A. *Ref.* G.S.Q. Pub. 196, pp. 18-21 (1905).

Twaddle's Bores. Stewart's Creek, about 5 miles S.E. of Townsville. *Par.* Stuart, *Co.* Elphinstone, *Dist.* North Kennedy. No. 1 Bore, *Por.* 99. Depth, 89 ft. (abandoned). No. 2 Bore, *Por.* 100. Depth, 101 ft. (abandoned). No. 3 Bore, *Por.* 100. Depth, 59 ft. (abandoned). No. 4 Bore, *Por.* 100. Depth, 148 ft. 7 in. *Min.Ref.* Coal, *see* 1642A. *Ref.* G.S.Q. Pub. 196, pp. 18-21 (1905).

Tygum (Waterford) Bores. On *Pors.* 22 and 25, about ¾-miles S.W. of Waterford. *Par.* Mackenzie, *Co.* Stanley, *Dist.* Moreton. Bore on *Por.* 22 discontinued at 50 ft.; that on *Por.* 25 is 230 ft. deep with 6-in. band of very hard coal at 37 ft. (These bores were put down by Hon. Henry Jordan.) *Ref.* G.S.Q. Pub. 225, p. 14 (1910).

Wallaroo Bores, 4½ miles W.S.W. of Wallaroo Rail. Stn. (Central line), 77½ miles (by rail and road) W. of Rockhampton. *Co.* Kimberley; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 175, p. 8 (1902), and Q.G.M. Jour., vol. 6, pp. 14-16 (1905). Other bores have been sunk in this neighbourhood probably during 1909, of which there are no records available.

Warreah Bore, close to line on Northern Railway. *Co.* Woura; *Dist.* Mitchell. Depth, 494 ft. Put down by Railway Department in 1896-7, penetrated sandstone, shales, and bands of coal. *Ref.* G.S.Q. Pub. No. 121, p. 6 (1898).

Warreah Bore (8 miles N.W. of), at Blantyre Coal Area (Gt. Northern line), 530 ft. to white sandstone, 562 ft. to coal bands, 587 ft. to white sandstone (water-bearing), 596 ft. to coal seam (4 ft. 9 in.), 615 ft. to coal seam (9 ft.), and 200 ft. of white sandstone and clay to bottom of bore (815 ft.). *See under* Artesian Bores and Notes. No. 63.

Coal Bores—*continued:*

Warren Bore. Half-mile S. of Warren Rail. Stn. (Central line). *Par.* Stanwell; *Co.* Livingstone; *Dist.* Port Curtis. Depth, 494 feet, no coal, struck fault. *Ref.* B.D.

Whitwood Colliery Bore. Josey's Paddock, 1½ mile S.S.E. from Dinmore. *Par.* Goodna, *Co.* Stanley, *Dist.* Moreton. The Whitwood 3-ft. coal seam was found at 300 ft. An inferior 6-ft. seam with several bands occurs at 288 ft. *Min.Ref.* Coal, *see* 1757. *Ref.* "Observer," 20th Feb., 1909.

Winton. Depth 750. Several small seams were met with between surface and 600 ft. *Min.Ref.* Coal, *see* 1641A.

Woodend Bore. At Rail. Stn., near Neerkol Cr. (Central line). Depth, 420 ft., no coal. *Par.* Stanwell; *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* B.D. *See* further note under Stanwell.

Coal Boring, Notes on. *See* list *under* Supplementary Reports, Nos. 3, 72, 100, 126, 132, 139, 144, 145.

Coal Discoveries near Chinchilla. *See under* Gov. Ming. Jour., Report No. 99.

—— near Hughenden. By E. O. Marks, Assist. Gov. Geol. *See under* Gov. Ming. Jour., vol. 10, p. 638 (1909), and G.S.Q. Pub. 235, pp. 14-17 (1911).

—— and Gravel at Nundah. *See under* Gov. Ming. Jour., Report No. 72.

—— and other Mines in the Central District. *See under* Gov. Ming. Jour., Report No. 62.

——, Gravel, and Water, East Moreton. *See under* Gov. Ming. Jour., Report No. 99A.

Coal in Artesian Bores. *See notes under* Artesian Bores referring to the following:—

Bimerah, No. 167 (2); Canobie, 200; Charlotte Plains (Cunnamulla), 206; ditto (Richmond), 207 (8); Dalby, 73; Darr River Downs, 245; Kynuna, 306 (5); Laidley Town, 31; Lindum Mere, 182; Malula, 321; Maria Cr., 66; Mitchell, 37; Racecourse (Eagle Farm), 9; Roma, 2, 46; Rosedale, 318 (2); Stanwell, 65; Warreah, 63.

—— in the vicinity of Brisbane. *See under* Gov. Ming. Jour., Reports Nos. 85, 94.

—— in Western Queensland. *Min.Ref. see* Nos. 1594A-1595A, 1597A-1598A, 1624A, 1640-2, 1706A-1710, 1804A-B, 1834A (?).

——, Logan District, Report on Sinking for. *See under* Gov. Ming. Jour., Report 38.

—— Measures near Townsville. *See under* Gov. Ming. Jour., Report No. 66.

—— Mine, 1 mile W. of Allora Rail. Stn. *Min.Ref.* Coal, *see* 1629.

—— Mines in Central Queensland. Notes on. *See under* Gov. Ming. Jour., Reports Nos. 39, 52, 62.

—— Mines in the Ipswich District. *See under* Gov. Ming. Jour., Report No. 32.

—— near Mary River, W. of Gundiah Rail. Stn. Preliminary Note on. *See under* Gov. Ming. Jour., Report No. 75.

—— near Pentland. *See under* Gov. Ming. Jour., Report No. 95, and G.S.Q. Pub. 235, pp. 21, 22 (1911).

—— Reports, *see under* Gov. Ming. Jour., Nos. 32, 38, 39, 52, 62, 66, 72, 75, 79, 85, 86, 94, 95, 99.

—— Trade. Some Notes on the present condition of Queensland. *See under* Gov. Ming. Jour., Report No. 79.

—— P.A. (53). W. side of Galah Gorge or Porcupine Cr., 44 miles N.E. of Hughenden. *Min.Ref.* Coal, *see* 1598A.

—— Statistics. *See tables,* Pls. 43, 45, 46, 46A; *see diagrams,* Pl. 55.

Coalpit Gully. Farm Cr., nr. Tannymorel Rail. Stn. *Min.Ref.* Coal, *see* 1631.

Coalstoun Lakes (about 5 miles S. of), 16 miles S.W. of Biggenden Rail. Stn. *Min.Ref.* Anglesite, *see* 12C; Azurite, 180A; Cerussite, 1188C; Galena, 2730B; Limonite, 5832A; Malachite, 6204A; Massicot, 6523A.

GEOLOGICAL NOTE: The two Coalstoun lakes are formed in the craters of lava cones, at an elevation of several hundred feet above the surrounding country.

Cobalt (Co). *Atom. Wt.* = 58·97. *Sp.gr.* = 8·50. *Colour*, Bluish-grey-metallic. Very tenacious. Magnetic. USES: The metal is used in some electroplating processes, but nickel is more commonly employed for this purpose. Smalt is the principal product of cobaltiferous ores, being used to give a blue colour to paper, linen, glass, enamels, etc., and in making pigments. Asbolite is a source of the metal, but the arsenide is the mineral from which most of the cobalt compounds are made.

MINERALS: *See* Asbolane, Cobalt oxide, Erythrine.

ASSOCIATED MINERALS: Iron Pyrites, Mispickel, Iron ores, Copper ores, Manganese ores, Gold, Bismuth ores, etc., etc.

MINERAL NOTE: Found in serpentine and quartz, and in nodules of bog manganese. Kilkivan may be considered to offer the best prospects in the State for the exploitation of cobalt deposits.

1834A.——. *Assoc. with* Iron Pyrites and Mispickel, in quartz lode. *Loc.* Asmus Claim, Mt. Hartley, 26 miles S.S.E. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* A.R., p. 199 (1909).

1835. ——. *Assoc. with* Copper Ore. *Loc.* Blue Mt., Funnel Cr., nr. Nebo, 40 miles S.byW. of Mackay. *Co.* Wodehouse; *Dist.* **Leichhardt.** *Ref.* L.B. 2, p. 231 (1889).

1835A.——. *Assoc. with* Manganese-dioxide, in nodules in alluvium. *Loc.* Eagle Junction, 4 miles (by rail) N. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* A.R., p. 193 (1909).

1836. ——. *Assoc. with* Manganese-dioxide, Dialogite, and Rhodonite, in serpentine. *Loc.* Mt. Cobalt, 7 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 169, pp. 16-19 (1901).

—— arsenate. *See* Erythrine.

Cobalt Bloom. *Syn.* Erythrine, *which see.*

——. discoveries. *See under* Discoveries.

—— Lode. Mt. Clara Hills, Black Snake. *Min. Ref.* Asbolane, *see* 122; Manganese-dioxide, 6486; Nickel, 6909.

Cobalt Ochre. *Syn.* Erythrine, *which see.*

—— ——. *See also* Asbolane.

1837. —— Oxide. *Assoc. with* Manganese-dioxide, Nickel, Copper oxide, Rhodonite, and Rhodochrosite, in lode. *Loc.* Mt. Coora, Black Snake, 8 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Assays:* Cobalt = 7, 2, 4, 22 per cent.; Nickel = 1·2, 3 per cent.; Manganese = 2, 18, 65 per cent.; Mean—Cobalt = 7·5 per cent.; Nickel = 2·25 per cent.; Manganese = 18 per cent. *Ref.* G.S.Q. Pubs. 28 (1886), 38 (1887), 169, pp. 16, 18 (1901).

Cobaltiferous Wad. *See* Asbolane.

Cobb and Co.'s Bore. *See under* Artesian Bores. No. 138.

Cobbold and O'Brien's Bore. *See under* Artesian Bores. No. 315.

Cobbrum Bore. *See under* Artesian Bores. No. 448.

Cochrane Cr., 5½ miles N.E. of Gympie. *Min. Ref.* Galena, *see* 3089; Gold, 4542; Iron Pyrites, 5468; Siderite, 7420; Zinc-Blende, 8214.

Cockatoo Bore. *See under* Artesian Bores. No. 218.

Cockatoo Cr. (14 miles above Bowen R.). *Min. Ref.* Clay-ironstone, *see* 1587; Kalinite, 5669.

Cockson's Claim, Black Ridge, Clermont. *Min. Ref.* Gold (alluvial), *see* 3313; Marcasite, 6511.

Cocoa Cr., trib. of McIvor R., N.N.W. of Cooktown. Antimony was discovered here about 1891. *Min. Ref.* Cervantite, *see* 1302, 1303; Gold (alluvial) 3201, (reef) 3662, 3663; Stibnite, 7613-7615.

GEOLOGICAL NOTE: The rocks about Cocoa Creek are sedimentary, and form a series of slates and sandstones. In these rocks there are vertical quartz lodes, striking north and south, carrying a high percentage of antimony, and about one ounce of gold to the ton. *See* G.S.Q. Pub. No. 209 for general notes on Cocoa Cr.

Coen Co.; Cook Dist. *See map*, Pl. 8.

Coen Goldfield—

Situation: *See maps*, Pls. 8, 9. The Township is situated on the Coen R., 45 miles (by road) W.N.W. of Port Stewart, and 189 miles N.W. of Cooktown. *Cos.* Coen and Sidmouth; *Dist.* Cook. Centre about *Lat.* 13° 35′ S.; *Long.* 143° 23′ E.

Discovery: Alluvial gold was discovered on this field in Feb., 1876, but the deposits were worked out in about five months. Several reefs which were found at the time continued to be worked after the alluvial deposits were exhausted.

Proclamation of Field: First gazetted 16th Aug., 1892; last alteration, 16th June, 1898, as follows: The whole catchment area of the South Coen River from the first crossing of the road from Rokeby to Lallah Rookh, about seven miles south-westerly from Coen township, to the south-eastern watershed of the Archer River and all its tributaries, and also the northern watershed of the Stewart River, from the confluence of the Little Stuart River with same westerly.

Area: 119,680 acres (187 square miles).

Population: 198 (in 1910).

Leases: Gold-mining leases in force, 1; area, 23 acres; Miners' Homesteads in force, 35; area, 162 acres (1910).

Principal Mining Centres: Coen, The Springs, and Klondyke, *which see.*

Mineral Statistics: Gold, *see tables and diagram*, Pls. 36, 46, 46a, and 47.

Statistical Note: The greatest recorded annual gold yield (1905) was 6,894 fine oz.; valued at £29,284. Smallest gold yield (1912) was 855 fine oz.; valued at £3,632.

The first gold return (1893) was a little over 2,000 oz.; in the next five years the gold yield averaged 3,400 oz., but in subsequent years the returns fluctuated considerably.

Total yield of gold to end of 1912 was 50,242 fine oz. This is valued at £213,413, and is equal to 0·28 per cent. of the whole gold production of the State.

Mineral References: Gold (alluvial), *see* 3208, 3209, (reef) 3692-3699; Iron, (Iron Pyrites) 5028-5029, (Mispickel) 6676-6678; Other Minerals: Calcite, 486; Fluorspar, 2655; Garnet, 3153; Pinite, 7066.

Geological Note: The rocks consist of granite, greywacke, slate, mica schist, quartzite, etc. Most of the reefs are of quartz, but sometimes calcite and fluorspar form the lode matter. *See* G.S.Q. Pub. 163, p. 24, for details.

Geological Publications: Reports—Nos. 163 (1901), 209 (1907). *See under* Geol. Surv. Pub. List for titles; *also under* Govt. Min. Jour., Reports Nos. 3, 8.

Warden: Stationed at Cooktown. Inspector of Mines: Stationed at Croydon.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

General Information: Consult *Pugh's Almanac, Queensland Post Office Directory, Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Coen R. (Lower Crossing), 45 miles (by road) N.N.W. of Port Stewart. *Min.Ref.* Garnet, *var.* Almadine, *see* 3153; Gold (alluvial), 3209.

Coghlan's Lode, Lawn Hills. *Min.Ref.* Galena, *see* 2693.

Coghlan Antimony Outcrops, Alice R., N. Queensland. *Min.Ref.* Antimony, *see* 71.

Cogoon Co., Maranoa Dist. *See map*, Pl. 12.

Coinda Bore. *See under* Artesian Bores. No. 243.

Coke. General notes are given under heading of Coal, and short references are made to the coking property of all coals in Table of Analyses under the same heading. No special work has been undertaken by the Geological Survey to determine the qualities of Queensland cokes.

Colamba, Par. of, Por. 93, 6½ miles N. of Chinchilla. *Min.Ref.* Coal, *see* 1627.

Colanya Bore. *See under* Artesian Bores. No. 177.

Coldwater Stn., Cardowar Run, S.byW. of Mackay. *Min.Ref.* Coal, *see* 1690a.

Coleman's Cave Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Coleraine Bore. *See under* Artesian Bores. No. 203.

Colinton, 25 miles N. of Esk.

Geological Note: The rocks in this locality comprises sandstones, etc., belonging to the Walloon Formation (Trias-Jura). *See* G.S.Q. Pub. No. 159 for notes.

Collaroy Stn., N.W. of St. Lawrence. *Min.Ref.* Azurite, *see* 235A; Copper (native), 2006; Epidote, 2597; Ferro-Calcite, 578; Gold, 4181; Malachite, 6337-6339; Mispickel, 6771; Silver, 7504.

Geological Note: The rocks at Collaroy comprise slates, quartzites, etc., of Gympie Formation (Permo-Carboniferous), and acidic volcanic rocks, the latter being the necks of old volcanic cones. *See* G.S.Q. Pub. No. 141 for notes and map.

Colleen Bawn, Twelve-mile, Croydon Goldfield. *Min.Ref.* Gold, *see* 3557.

Colley's Lord Roberts' Mine, Gilberton. *Min.Ref.* Gold, *see* 3829; Telluride Ore, 7701.

Collie Blue Station, Carnarvon Range, 70 miles southerly from Springsure. *Min.Ref.* Kerosene Shale, *see* 5712A.

Collieries. List *under* Coal.

Collingwood. 32 miles W. of Winton. *Min.Ref.* Gypsum, *see* 4616A.

—— Lease (176). Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 783; Iron Pyrites, 5024; Mispickel, 6670; Tourmaline, 7840.

Collins's Banana Plantation, Por. 66, 11 miles N.N.W. of Brisbane. *Min.Ref.* Gold, *see* 4221; Manganese-dioxide, 6451.

Collumpton Bore. *See under* Artesian Bores. No. 437.

Colo Flat, Marodian Goldfield. *Min.Ref.* Gold (alluvial), *see* 3407.

Geological Note: The country rocks are diorite and slate, in both of which there are small quartz leaders carrying gold. Alluvial deposits in the district also contain gold, and have been worked to some extent. Manganese occurs as a secondary deposit in a red jasperoid slate on the top of Mt. Colo. *See* G.S.Q. Pub. No. 179 for notes.

—— Gold Mines, Marodian Goldfield. *Min.Ref.* Gold (alluvial), *see* 3407; (reef) 4407.

Colombo Bore. *See under* Artesian Bores. No. 146.

Colonidow, Woodlark Is., Brit. New Guinea. *Min.Ref.* Gold (alluvial), *see* 3432.

Colophonite. *Var. of* Garnet; *which see.*

Colorado Silver Mine (Argentine), Star R. Mineral Field. *Min.Ref.* Anglesite, *see* 46; Cerussite, 1265; Copper Pyrites, 2250; Galena, 2983; Iron Ochre, 4915; Ironstone, 5571; Malachite, 6311; Manganese-dioxide, 6445; Massicot, 6541; Minium, 6610; Mispickel, 6757.

Colossus Tin Claim, Thompson's Cr., S. of Watsonville. *Min.Ref.* Cassiterite, *see* 1145.

Colton Bores. *See under* Coal Bores.

Columba Colliery, on S. br. of Wild Horse Creek, 2½ miles N.W. of Graham Siding, Bluff Rail. Stn. (Central line). *See maps,* Pls. 10, 11-33. *Min.Ref.* Coal, *see* 1687.

Geological Note: *See under* Bluff Coal Mines.

Columbia Consolidated Mine, Gympie Goldfield. *Min.Ref.* Gold, *see* 4423; Mispickel, 6812.

—— Reef, Gympie, Goldfield. *Min.Ref.* Galena. *see* 3080; Gold, 4500.

—— ——. Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— Tin Mine, Irvinebank. *Min.Ref.* Cassiterite, *see* 858.

—— and Smithfield L. (672). Gympie Goldfield. *Min.Ref.* Gold, *see* 4424; Graphite, 4607.

Columbiad Group of Copper Mines, Cloncurry. Includes Mountain Maid and No. 1 W., Columbiad, Caine's King and Atalanta M. Leases. *Min.Ref.* Azurite, *see* 161; Chlorite, 1421; Chrysocolla, 1497; Göthite, 4562; Limonite, 5755; Malachite, 6104-6106; Redruthite, 7214, 7215; Tile Ore, 2502, 2502A.

—— M.L. (500). Cloncurry. *Min.Ref.* Malachite, *see* 6105; Redruthite, 7214; Tile Ore, 2502.

Columbite. *Syn.* Niobite. *Compo.* Niobate of iron. *Colour*, iron-black, brownish black. *Streak*, red to black. *Lustre*, submetallic. Brittle. Opaque. *H.* = 6. *Sp.gr.* = 5·3—7·3. Tantalum and Manganese are nearly always present, the former graduating it into Tantalite, the latter into Mangano-tantalite. *Contents* (*max.*), Niobic oxide 82 per cent.

1838. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Fossilbrook, 34 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

Columbium. *See* Niobium.

Combination Copper Mine, Halpin's Cr., br. of California Cr. *Min.Ref.* Copper Ores, *see* 2031; Silver, 7460.

Combo Cr., Towalla Goldfield, 18 miles W.byS. of Geraldton. *Min.Ref.* Gold (alluvial), *see* 3233, (reef) 3780, 3782, 3791; Iron Pyrites, 5085.

Come-at-Last Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3485; Graphite, 4576; Iron Pyrites, 4936; Ironstone, 5493.

Come-by-Chance Tin Claim, Watsonville. *Min.Ref.* Cassiterite, *see* 891; Serpentine, 7380; Steatite, 7682.

Comet Copper M.L. (243). Hilda Group, Cloncurry. *Min.Ref.* Azurite, *see* 162; Copper Pyrites, 2085; Limonite, 5770; Malachite, 6127; Tile Ore, 2514.

—— Gold Mine, Maytown. Palmer Goldfield. *Min.Ref.* Gold, *see* 3678.

—— P.P.A. (135). Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235c; Malachite, 6339e.

—— Reef, Table Top. Croydon Goldfield. *Min.Ref.* Gold, *see* 3541; Ironstone, 5502; Massicot, 6518.

—— R., Flows N. into Mackenzie R., nr. Comet Rail. Stn. (Central line). *Min.Ref.* Coal, *see* 1688.

—— Tin Mine. Irvinebank. *Min.Ref.* Cassiterite, *see* 859; Turgite, 7892.

—— —— ——. Stanhills Tinfield. *Min.Ref.* Azurite, *see* 157; Cassiterite, 765; Copper Pyrites, 2068; Galena, 2690; Malachite, 6089; Zinc-Blende, 8051.

Commissioner's Hill Mine. Gilberton. *Min.Ref.* Gold, *see* 3830; Limtstone, 643.

—— Reef. Cape R. Goldfield. *Min.Ref.* Gold, *see* 4051.

—— Report on Miners' Health. *See under* Govt. Mining Journal, Report No. 123.

Commodore Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Commonwealth Customs Tariff. *See under* Customs.

Commonwealth Mineral Production. *See under* Mineral Production.

Commonwealth Mine. Mt. Havilah. *Min.Ref.* Argentite, *see* 92; Calcite, 477; Cuprite, 2420; Bismuthinite, 358; Copper Pyrites, 2133; Gold, 3599; Hematite, 4697; Iron Pyrites, 4999; Malachite, 6200; Mispickel, 6657; Pyrrhotite, 7152; Redruthite, 7275; Silver, 7436; Tenorite, 7715; Zinc-Blende, 8068. *See also* A.R.D.M., p. 189 (1910).

—— M.L. (330). Eva Group, Cloncurry. *Min.Ref.* Chrysocolla, *see* 1499; Copper Pyrites, 2080; Malachite, 6117; Redruthite, 7224; Tile Ore, 2510.

Commotion Lode, Kilkivan. *Min.Ref.* Cinnabar, *see* 1552, 1553; Copper carbonate, 1967.

Comongin North Bore. *See under* Artesian Bores. No. 220.

Compigne Is., Port Curtis. *Min.Ref.* Manganese-dioxide, *see* 6469.
Geological Note: *See under* Port Curtis Island.

Compton Downs Bores. *See under* Artesian Bores. No. 221.

Comstock Lease (187). Kangaroo Hills Mineral Field. *Min.Ref.* Copper Pyrites, *see* 2244; Iron Pyrites, 5279; Zinc-Blende, 8156.

—— Mine, Lappa Junction Rail. Stn. *Min.Ref.* Argentite, *see* 96; Galena, 2801; Massicot, 6530; Silver Ore, 7563.

—— Silver Mine, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2926; Gold, 4039; Massicot, 6538; Silver, 7484.

Comstock (Stockholm) Reef, Charters Towers Goldfield. *Min.Ref.* Copper carbonate, *see* 1913; Copper Pyrites, 2219; Galena, 2878; Gold, 3972; Iron Pyrites, 5159; Zinc-Blende, 8121.

Conachan's Sel., W. of Quarry Cr., Stanwell. *Min.Ref.* Azurite, *see* 250A; Copper Pyrites, 2300; Malachite, 6367.

Conbar Co.; Gregory South Dist. *See map,* Pl. 18.

Cone Cr., trib. of Duck Cr., Cloncurry. *Min.Ref.* Antimony, *see* 69; Chrysocolla, 1495; Copper carbonate, 1875; Copper Pyrites, 2072-2074; Cuprite, 2394-2396; Hematite, 4682; Iron Pyrites, 4927-4930; Limonite, 5752, 5753, 5784-5787; Malachite, 6142-6153; Redruthite, 7211-7213, 7242-7244, 7249, 7250; Siderite; 7402; Stibnite, 7604; Tetrahedrite, 7754, 7755; Tile Ore, 2498, 2499, 2523, 2524, 2526, 2527; Turgite, 7883.

Cone-in-Cone Limestone. *Var. of* Calcite, *which see.*

Confidence Reef, Table Top, Croydon Goldfield. *Min.Ref.* Gold, *see* 3547.

Connemarra Reef, Calliope Goldfield. *Min.Ref.* Calcite, *see* 527; Gold, 4257; Iron Pyrites, 5362.

Connolly Cr., trib. of Burdekin R. Rises N. of Ravenswood, and flows for about 14 miles S.S.W., into the Burdekin River. *Min.Ref.* Cerussite, *see* 1229; Galena, 2944; Gold (alluvial), 3262; (reef), 4040; Iron Pyrites, 5255.

Connor's R. Rises in Connor's Range, 65 miles S. of Mackay. Flows S.byW. into Isaacs R., 35 miles W. of St. Lawrence. Length about 40 miles. *Min.Ref.* Coal, *see* 1690A.

Connor's Range. Extends N. from 15 miles N.W. of St. Lawrence to 40 miles S. of Mackay. *Min.Ref.* Anglesite, *see* 63; Cerussite, 1300; Galena, 3064, 3065; Gold, 4346; Malachite, 6369.

Conoles Prickly Pear Sel., 4 miles from Toowoomba. *Min.Ref.* Oil Shale, *see* 6912A.

Conran's Reef. Norton (Milton) Goldfield. *Min.Ref.* Galena, *see* 3046; Gold, 4270; Iron Pyrites, 5370; Mispickel, 6790; Scapolite, 7338B; Silver, 7521; Zinc-Blende, 8190.

Consolidated Tin Mine. Montalbion. *Min.Ref.* Cassiterite, *see* 876; Copper Pyrites, 2153; Mispickel, 6688; Zinc-Blende, 8081.

Constant Cr. Hampden, N.W. of Mackay. *Min.Ref.* Coal, *see* 1646; Zircon, 8223.

Constitution Hill (foot of), Cawarral Goldfield. *Min.Ref.* Chromite, *see* 1482.

——, 3 miles N.E. of Mt. Morgan. *Min.Ref.* Hematite, *see* 4797; Magnetite, 6056.

Consuelo Co.; Leichhardt Dist. *See map,* Pl. 10.

Content Reef. Croydon Goldfield. *Min.Ref.* Fluorspar, *see* 2652; Gold, 3486; Rock Crystal, 7183.

Continong Gold Reef. Burdekin R. *Min.Ref.* Azurite, *see* 215B; Chalcanthite, 1334; Copper Pyrites, 2242; Gold, 4085; Malachite, 6293.

Contra Copper Lode. Cloncurry. *Min.Ref.* Asbestos, *see* 105; Azurite, 153; Calcite, 449; Copper carbonate, 1871; Copper Pyrites, 2063; Cuprite, 2385; Ironstone, 5482; Malachite, 6079.

Contractions. *See* Abbreviations.

Cooby Cr., 6 miles N.W. of Spring Bluff Rail. Stn. *Min.Ref.* Magnesite, *see* 5946.

Cooche Cr. Cooranga Stn., W.S.W. of Gayndah. *Min.Ref.* Turgite, *see* 7890.

Coochee Reach. Russell Goldfield. *Min.Ref.* Gold (alluvial), *see* 3222.

Coochin Coochin. Three miles S. of Dugandan. *Lat.* 28° 4′ S.; *Long.* 152° 42′ E. *Min.Ref.* Clay Ironstone, *see* 1592; Galena, 3138A; Ilmenite, 4910.

Coogee Bore. *See under* Artesian Bores. No. 413.

Cooinda Bore. *See under* Artesian Bores. No. 442.

Coojeebah Cr. Russell Goldfield. *Min.Ref.* Gold (alluvial), *see* 3223.

Cook *Co.*, partly in Burnett and partly in Wide Bay Districts. *See* Pl. 4.

Cook District—

Situation: (*See maps*, Pls. 8 and 9.) *Lats.*, 9° and 20°; *Longs.*, 141° and 147°. The most northerly district of the State, and comprising the whole of Cape York Peninsula and the islands of Torres Strait. It is bounded on the west by Gulf of Carpentaria, on the north by Torres Strait, on the east by Pacific Ocean, and on the south by the Burke and North Kennedy Districts. The principal western rivers, with their branches, are—Batavia, Archer or Peach (br. Coen R.), Holroyd or Lukin, Coleman (trib. King R.), Mitchell (tribs. Alice, Palmer, Walsh, Lynd, Tate, Hodgkinson, St. George, and Dry Rivers), Staaten, Gilbert (tribs. Etheridge, Einasleigh, Robinson, Percy, and Copperfield Rivers). The rivers on the eastern coast are the Pascoe, North Kennedy (trib. Morehead or Hann), Normanby (tribs. Kennedy, Mossman, Deighton, and Laura), Endeavour, Annan, Barron, Russell (trib. Mulgrave R.), and Johnstone.

Area: 99,775 sq. miles (including 397 sq. miles of islands).

Principal Mining Centres: *Goldfields*—Alice River, Coen, Etheridge Green Hills, Hamilton, Hayes Creek (Prov.), Hodgkinson, Jordan, Lochinvar (Prov.), Mulgrave, Palmer, Potallah (Prov.), Rocky River, Russell, and Starcke. *Mineral Fields*—Bowden (Wolfram); Chillagoe, including Arbouin (Copper, Tin), Bamford (Wolfram), Chillagoe (Copper), Koorboora (Tin, Copper), Mt. Mulligan (Coal), Muldiva (Silver-Lead, Copper), Mungana (Copper), O.K. (Copper), Tate (Tin), Wolfram Camp (Wolfram); Cooktown, including Annan R. and Bloomfield R. Tin Mines; Herberton, including California Creek (Tin), Clohesy (Gold), Coolgarra (Tin), Emuford (Wolfram), Herberton (Tin), Irvinebank (Tin), Mareeba (Gold), Montalbion (Tin), Mt. Carbine (Wolfram), Mt. Fraser (Tin), Mt. Garnet (Copper), Mt. Lewis (Tin), Mt. Molloy (Copper), Mt. Spurgeon (Tin), Nymbool (Tin), Ord (Tin), Stannary Hills (Tin), Watsonville (Tin). *Other Localities*—Angor (Tin), Archer River (Tin), Batavia River (Gold), Einasleigh (Copper), Fossilbrook (Wolfram, Tin), Granite Creek (Tin), Lancewood (Tin), Noble Island (Wolfram, Copper), Truxillo (Tin), Little River (Coal), Deighton R., etc. (Coal).

Counties—

Archer *Co.*

Balurga *Co.*

Banks *Co.* Cooktown Mineral Field (Annan R. Tinfield). Starcke Goldfield (in part—*See also* Melville *Co.*).

Bolwarra *Co.* Walsh and Tinaroo Mineral Fields (in part—*See also* Hodgkinson, Lynd, Nares, Walsh, Wrotham *Cos. See also under* Kennedy North District).

Byerley *Co.*

Chelmsford *Co.* Palmer Goldfield (in part—*See also* King, Mossman, Strathlevan *Cos.*)

Coen *Co.* Hamilton Goldfield (in part—*See also* Sidmouth *Co.*). Coen Goldfield (in part—*See also* Sidmouth *Co.*).

Cootah *Co.*

Copperfield *Co.* Etheridge Goldfield (in part—*See also* Einasleigh, Etheridge, Gilbert, Lang, Lyndhurst, Percy, Tate, Victor *Cos.*)

Dagmar *Co.* Hodgkinson Goldfield (in part—*See also* Hodgkinson, Lynd, Nares *Cos.*). Walsh and Tinaroo Mineral Fields (in part—*See also* Bolwarra *Co.*). Mt. Molloy, Mt. Carbine.

Dalhunty *Co.* Dunbar *Co.*

Einasleigh *Co.* Etheridge Goldfield (in part—*See also* Copperfield *Co.*).

Etheridge *Co.* Etheridge Goldfield (in part—*See also* Copperfield *Co.*).

Franklin *Co.*

Gilbert *Co.* Etheridge Goldfield (in part—*See also* Copperfield *Co.*).

Gould *Co.* Hann *Co.*

Hodgkinson *Co.* Walsh and Tinaroo Mineral Fields (in part—*See also* Bolwarra *Co.*). Hodgkinson Goldfield (in part—*See also* Dagmar *Co.*).

Jardine *Co.* Kalkah *Co.* Kendall *Co.*

King *Co.* Palmer Goldfield (in part—*See also* Chelmsford *Co.*).

Koolatah *Co.*

Lang *Co.* Etheridge Goldfield (in part—*See also* Copperfield *Co.*).

Lakin *Co.*

Lynd *Co.* Walsh and Tinaroo Mineral Fields (in part—*See also* Bolwarra *Co.*). Hodgkinson Goldfield (in part—*See also* Dagmar *Co.*).

Cook District—*continued:*

Counties—*continued:*

Lyndhurst *Co.* Etheridge Goldfield (in part—*See also* Copperfield *Co.*).

Maramie *Co.* Marga *Co.*

Melville *Co.* Starcke Goldfield (in part—*See also* Banks *Co.*).

Mossman *Co.* Little R. Field (Coal, Copper, Mercury). Palmer Goldfield (in part—*See also* Chelmsford *Co.*).

Nares Co. Hodgkinson Goldfield (in part—*See also* Dagmar *Co.*). Jordan Goldfield, Mulgrave Goldfield, Russell Goldfield. Walsh and Tinaroo Mineral Fields (in part—*See also* Bolwarra *Co.*).

Pera *Co.*

Percy *Co.* Etheridge Goldfield (in part—*See also* Copperfield *Co.*).

Shelburne *Co.*

Sidmouth *Co.* Coen Goldfield (in part—*See also* Coen Co.). Hamilton Goldfield (in part—*See also* Coen Co.), Rocky R. Goldfield.

Somerset *Co.*

Strathleven *Co.* Palmer Goldfield (in part—*See also* Chelmsford *Co.*).

Strathmore *Co.*

Tate *Co.* Etheridge Goldfield (in part—*See also* Copperfield *Co.*).

Torres *Co.* Horn Island Goldfield.

Victor *Co.* Etheridge Goldfield (in part—*See also* Copperfield *Co.*).

Walsh *Co.* Walsh and Tinaroo Mineral Fields (in part—*See also* Bolwarra Co.).

Warner *Co.* Alice R. (Philp) Goldfield.

Weipa *Co.*; Weymouth *Co.*

Wrotham *Co.* Walsh and Tinaroo Mineral Fields (in part—*See also* Bolwarra *Co.*).

Yagooya *Co.* York *Co.*

MINERAL REFERENCES AND STATISTICS: *See under* names of Principal Mining Centres. *Maps, see* Pls. 8, 9.

Cooktown, 1,169 miles N.W. of Brisbane. *Co.* Banks; *Dist.* Cook. *Lat.* 15° 27′ S. *Long.* 145° 15′ E. *See maps,* Pls. 8, 9.

Cook *Co.*, partly in Burnett Dist., partly in Wide Bay Dist. *See map.*

PORT for the Palmer, Alice R. (Philp), and Starcke Goldfields; the Cannibal and Granite Crs. Tin Mining Centres; the Annan R. and Bloomfield R. Tinfields; the Cocoa Cr. Gold and Antimony Mines; and the Little R. and other Cooktown coalfields.

HARBOURAGE: The Endeavour River is available for vessels of large tonnage, but the entrance to the harbour is very narrow. Tides vary from 4 ft. to 10 ft. Depth of water at principal wharves vary from 15 ft. to 17 ft. at L.W.S.

POPULATION (of Cook District), 3,361 (1911).

RAINFALL: *See under* separate heading.

MINERAL STATISTICS: *See under* Cooktown Mineral Field.

MINERAL REFERENCE: Hornblende, 4826; Olivine, 6922; Picotite, 7583.

GEOLOGICAL NOTE: The rocks about the town comprise quartzites, slates, etc., of Gympie Formation, belonging to the Permo-Carboniferous System. *See* G.S.Q Pub. 87, p. 20, for details.

GEOLOGICAL PUBLICATIONS (Cooktown and District): Reports—Nos. 11, 66, 70, 91, 123, 144, 180, 210. Maps, Nos. 109, 110, 111. *See under* Geol. Sur. Pub. List for titles. *See also under* Supplementary Report List, Nos. 12, 35.

GENERAL INFORMATION: Consult *Pugh's Almanac, Queensland Post Office Directory, Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

NEWSPAPERS: *Cooktown Independent, New Endeavour Beacon.*

Cooktown Coalfields—

See Little River Coalfield, Deighton R., Welcome Cr., Oakey Cr., Guppy's Tableland. *Min.Ref.* Coal, *see* 1602-1610A, 1613-1617. *Note.*—No coal produced from these localities up to 1912.

Cooktown Mineral Field—

Situation: *See maps*, Pls. 8, 9. The Field extends from about 4 miles to 40 miles S. of Cooktown. *Co.* Banks. *Dist.* Cook. Centre about *Lat.* 16° 45′ S.; *Long.* 145° 15′ E.

Population: 361 (estimated 1910). Area: 468,480 acres (732 sq. miles).

Proclamation of Field: First (and only one) gazetted, 13th February, 1889, as follows:—Commencing at the mouth of the Annan River, and bounded thence by that river upwards to the junction of Oakey Creek, by the southern watershed of Oakey Creek and its tributaries, and by the northern watershed of King's Creek or New Year's Day Lagoons, and of the East Normanby River, south-westerly to the confluence of the East Normanby River and the Normanby River, by the watershed between the East Normanby and West Normanby Rivers south-easterly, and a line southerly to the range forming the northern watershed of the Daintree River and its tributaries, by that range forming the southern boundary of the parish of Tribulation easterly to Cape Tribulation, on the shore of the Pacific Ocean, by the sea-coast northerly to the point of commencement;—exclusive of all reserved or freehold lands, the leased halves of Kingslake, Kingsdale, and Avoca Runs, grazing farms, and any other authorised holdings.

Leases: Mineral Leases in force, 26; area, 607 acres. Miners' Homesteads, 15; area 67 acres (1912).

Principal Mining Centres: Annan River Tinfield and Bloomfield River Tin Workings, *which see.*

Mineral Statistics: Silver, *see tables*, Pls. 37, 46, 46a, Tin, Pls. 38, 46, 46a. Antimony, Pls. 40, 46, 46a. Wolfram, Pls. 42, 46, 46a.

Mineral References: *See under* Annan R. Tinfield and Bloomfield R. Tin Workings.

Geological Note: In the district there are three divisions of rocks, viz.—slates and quartzites, of Gympie Formation (Permo-Carboniferous), sandstones, grits, and conglomerates of Desert Sandstone Formation (Upper Cretaceous), and granite. Tin occurs at the Annan Tinfield in a quartz matrix associated with tourmaline in granite country, and at the Bloomfield Mines in lodes in the old sedimentary rocks. Alluvial tin-bearing deposits occur at both places.

Geological Publications: *See under* Cooktown.

Warden: Stationed at Cooktown. Inspector of Mines: Stationed at Croydon.

Coolabunia Sub-artesian Bore. *See under* Artesian Bores. No. 359.

Coolan's P.A. (near), Mt. Wyatt Goldfield. *Min.Ref.* Copper Pyrites, *see* 2264a; Galena, 3022a; Pyrolusite, 7125a; Wolfram, 8034a; Zinc-Blende, 8168a.

Coolan's Claim, Carmody Stn., Eukalunda. *Min.Ref.* Wolfram, *see* 8034b.

Coolcocra, 14 miles (by rail), E.N.E. of Rockhampton. *Min.Ref.* Gold, *see* 4330; Silver, 7529.

Coolgardie Reef, 3 miles N. of Georgetown, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3733.

Coolgarra Tin Mines—

Situation: *See maps*, Pls. 16, 17, 22: The township is 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell. *Dist.* Kennedy North. Centre about *Lat.* 17° 38′ S., *Long.* 145° 13′ E. Tin was discovered at Nettles Creek in 1881. The first recorded leases were taken up in 1898. The "Alhambra" was taken up by Jas. Funnie, on 1st January, 1900.

Area: Included in Herberton Gold and Mineral Field.

Population: 107 (estimated 1910). Now included in the Herberton Gold and Mineral Fields.

Mineral Statistics: Tin, *included in* Herberton, in *stat. tables*, Pls. 38, 46, 46a. Wolfram, *included in* Herberton, in *stat. tables*, Pls. 42, 46, 46a.

Mineral References: Silver, *see* 7478; Lead (Anglesite), 40, 41; (Galena), 2844-2848; (Minium), 6594, 6595; (Pyromorphite), 7145. Copper (Azurite), 209, 210; Copper Pyrites, 2209a; (Cuprite), 2457; (Malachite), 6276, 6279. **Tin** (Cassiterite), 1037-1062; Bismuth (Bismuthinite), 372; **Wolfram,** 8006-8010; Molybdenite, 6855. Zinc-Blende, 8107 8108. Manganese-dioxide, 6429, 6429a. Rutile, 7332. Iron (Göthite), 4567; (Hematite), 4728-4731; (Iron Pyrites), 5136, 5137; (Limonite), 5872, 5873; (Mispickel), 6734, 6735; (Turgite), 7898. Other Minerals: Amethyst, 7169; Chlorite, 1446-1449; Felspar, 26339; Fluorspar, 2666, 2667; Muscovite, 6893; Penninite, 7062, 7063; Topaz, 7797, 7798; Tremolite, 4875; Websterite, 7923. Prosopite, 7077a.

Coolgarra Tin Mines—*continued:*

GEOLOGICAL NOTE: The country rocks consist of quartzites, shales, etc., of probably Gympie Formation, in contact with granite. Altered basic rocks form tin-bearing dykes in the sedimentary rocks and also, occasionally, in the granite. Wolfram occurs in irregular masses of quartz in slate near granite. *See* G.S.Q. Pub. 72 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 72 (1891), 77 (1891), 134 (1898), and 165 (1901). Maps No. 220 (1909). *See* Geol. Surv. Pub. List for title.

WARDEN AND INSPECTOR OF MINES, both stationed at Herberton.

Coolibah Bore. *See under* Artesian Bores. No. 293.

Coolibah Creek Bore. *See under* Artesian Bores. No. 334.

Cooliman Cr., Towalla Goldfield. *Min.Ref.* Galena, *see* 2810; Gold, 3779, 3790; Iron Pyrites, 5084.

Coolullah Mining Centre, Cloncurry, includes Bull Cr., Crusader, Dobbyn, St. Paul's, Von Bremen's, and Warwick Castle Groups of Copper Mines. *Min.Ref.* Chrysocolla, *see* 1511; Copper (native), 1984, 1985; Copper Pyrites, 2103, 2105-2107; Cuprite, 2410-2411A; Epidote, 2591A; Hematite, 4694; Limonite, 5803, 5804, 5806-5811, 5823-5826; Magnetite, 5969; Malachite, 6164-6173; Redruthite, 7255-7261, 7269-7273; Tetrahedrite, 7758; Tile Ore, 2530, 2540, 2543.

Cooma Bore. *See under* Artesian Bores. No. 394.

Coomara Bore. *See under* Artesian Bores. No. 262.

Coomburrah Run Bore. *See under* Artesian Bores. No. 222.

Coomera R., S.E. of Brisbane. *Min.Ref.* Gold, *see* 4227, 4228; Graphite, 4604; Manganese-dioxide, 6457.

Coomrith Bore. *See under* Artesian Bores. No. 223.

Coonanbula Run (Hungry Hill), 16 miles S.W. of Eidsvold. *Min.Ref.* Stibnite, *see* 7608.

Coongarry Bore. *See under* Artesian Bores. No. 149.

Coongoola Run and District Bores. *See under* Artesian Bores. Nos. 224, 225.

Coonyan Prov. Goldfield, adjacent to Canoona Goldfield. Proclaimed in Dec., 1893. Now included in Canoona (?).

Cooper Co., Gregory South Dist. *See map,* Pl. 18.

Cooper's Cr. runs into Funnel Cr., 4 miles W. of Mt. Britton. *Min.Ref.* Coal, *see* 1703.

—— Plains, South Coast Rail. line. *Min.Ref.* Lydianstone, *see* 5657.

—— Range, 80 miles S.W. of Rockhampton. *Min.Ref.* Copper, *see* 1851.

—— Cr. and Hail Cr. (flat between), 60 miles S.byW. of Mackay. *Min.Ref.* Opal (wood), *see* 7009.

Co-operative (Alice R.) Bore. *See under* Artesian Bores. No. 155.

Cooppooroo Cr., Russell Goldfields. *Min.Ref.* Gold (alluvial), *see* 3224; Platinum, 7072.

Coorajah Co., Mitchell Dist. *See map,* Pl. 18.

Cooran, on North Coast Rail. Line. *Min.Ref.* Hyalite, *see* 7021; Opal (common), 6999. *See also* Supplementary Report List, No. 41.

Coorabulka Run Bore. *See under* Artesian Bores. No. 226.

Cooranga Stn., 20 miles W.S.W. of Gayndah. *Min.Ref.* Beauxite, *see* 288; Turgite, 7890.

Coomooboolaroo Road, nr. Duaringa Rail. Stn. (Central line). *Min.Ref.* Jasper, *see* 5651.

Cooroo Point, Bartle Frere Diggings. *Min.Ref.* Gold (alluvial), *see* 3217.

Coorooman, on Emu Park Rail. Line, N.E. of Rockhampton. *Min.Ref.* Manganese-dioxide, *see* 6476.

Cootah Co., Cook Dist. *See map,* Pl. 8.

Cootharaba and Noosa Waters (Six-mile Cr.), 24 miles E. of Gympie. *Lat.* 26° 15′ S. *Long.* 153° 4′ E. *Min.Ref.* Hyalite, *see* 7022.

Cooyar, 84 miles W.N.W. of Brisbane. *Min.Ref.* Coal, *see* 1717, 1720A; Ilmenite, 4905.

GEOLOGICAL NOTE: The rocks in this locality include granite, porphyry, and coal measures. The porphyry forms numerous dykes in the granite, and the coal measures contain inferior coal seams. *See* G.S.Q.P. No. 169 for details.

Copai. Gypsum is known by this name in Western Queensland.

Copper (Cu.) *Atom. Wt.* 63·57. *Sp.gr.* 8·945.

Minerals: *See* Atacamite, Bornite, Bournonite, Chalcolite, Chalcanthite, Chalcostibite, Chalcotrichite, Chrysocolla, Copper Pyrites, Covelline, Cuprite, Dioptase, Linarite, Olivenite, Redruthite, Tenorite, Tetrahedrite.

Associated Minerals: Ores of Antimony, Gold, Lead, Manganese, Silver, Tin, Zinc, etc.; Iron Pyrites, Mispickel, Molybdenite, Scheelite, Wolfram, Barytes, Calcite, Chlorite, Epidote, Felspar, Garnet, Gypsum, Jasper, Kaolin, Quartz, Wollastonite, etc., etc.

Gangues: Calcite, Chlorite, Diorite, Felspar, Garnet, Ironstone, Kaolin, Limestone.

Country Rocks: Diorite, Felsite, Greywacke, Greisen, Granite, Porphyry, Quartzite, Sandstone, Shale, Slate, Tuff.

Mineral Note: Copper is often associated with Iron Pyrites, Mispickel, and Zinc-Blende. When Iron Pyrites or Mispickel is associated with the copper ore, gold is generally the important accessory metal present. With Galena, silver predominates; whilst with Zinc-Blende the gold and silver values are found to vary considerably. The occurrence of copper with tin and wolfram is common, but with antimony rare. Of the non-metallic minerals Calcite, Kaolin, and Quartz are common associates, whilst Wollastonite and Epidote are present occasionally. Some of these minerals easily decompose near the surface, and only at water-level are they found to be unaltered.

Geological Note: A large number of copper deposits are found where granite comes in contact with limestone, the alteration rock, garnet, being always present. Deposits of copper are also common where diorites intrude sedimentary rocks, also where quartzite and other secondary rocks are found in zones or regions of alteration, as at Mt. Morgan. Sometimes copper is found in well-defined lodes, with and without quartz, in granite, greywacke, tuff, slate, and sandstone. All copper deposits are of Gympie (Permo-Carboniferous) or older Formations those occurring in association with limestone being Permo-Carboniferous, Devonian, or Silurian, and those in diorite principally Permo-Carboniferous. Geological data very incomplete.

Geographical Note: Copper is distributed over many parts of the eastern half of Queensland between Cape York Peninsula and the southern border, and also over a large area on the western part of the State. The principal mining localities are Chillagoe, Cloncurry, Mt. Morgan, Mt. Perry, and Mt. Chalmers. Other important places include Mackay District, Gladstone District, Kilkivan, Peak Downs, (Clermont), Charleston (Forsythe), and Texas. *See maps*, Pls. 3, 5, 7, 9, 11, 13, 15, 17, 21.

Copper Fields and Mining Centres:

(*See further references under names of fields.*)

Balcomba, N. of Central Rail. *See maps*, Pls. 16, 17.
Black Snake, nr. Kilkivan. *See maps*, Pls. 4, 5.
Blue Mountains, S.W. of Mackay. *See maps*, Pls. 14, 15.
Boolboonda, nr. Mt. Perry. *See maps*, Pls. 4, 5, 35.
Calgoa, nr Kilkivan. *See maps*, Pls. 4, 5.
Charleston, nr. Georgetown. *See maps*, Pls. 8, 9, 22.
Chillagoe, W. of Cairns. *See maps*, Pls. 8, 9, 22.
Cloncurry, Western Queensland. *See maps*, Pls. 20, 21, 23.
Copperfield, nr. Clermont. *See maps*, Pls. 10, 11.
Glassford Cr., S.S.W. of Gladstone. *See maps*, Pls. 2, 3, 34.
Einasleigh, nr. Charleston Rail. Stn. *See maps*, Pls. 8, 9, 32.
Lynd Copper Mine, nr. Fossilbrook. *See maps*, Pls. 8, 9, 22.
Many Peaks, S.S.W. of Gladstone. *See maps*, Pls. 2, 3, 34.
Mt. Cannindah, S.S.W. of Gladstone. *See maps*, Pls. 4, 5.
Mt. Chalmers (Gt. Fitzroy Mines), nr. Rockhampton. *See maps*, Pls. 2, 3, 34.
Mt. Flora, S.W. of Mackay. *See maps*, Pls. 10, 11.
Mt. Garnet, nr. Rail., Mt. Garnet, br. of Chillagoe line. *See maps*, Pls. 16, 17, 22.
Mt. Hector, S.S.W. of Gladstone. *See maps*, Pls. 2, 3, 34.
Mt. Molloy, nr. Mareeba. *See maps*, Pls. 8, 9, 22.
Mt. Morgan, Central Queensland. *See maps*, Pls. (?)
Mt. Orange, S.W. of Mackay. *See maps*, Pls. 10, 11.
Mt. Perry (Tenningering). *See maps*, Pls. 4, 5.
Mt. Warminster, nr. Rockhampton. *See maps*, Pls. 2, 3.
Moonmera, nr. Mt. Morgan. *See maps*, Pls. (?)
Mudloo, nr. Kilkivan. *See maps*, Pls. 4, 5.
Mungai, nr. Mt. Perry. *See maps*, Pls. 4, 5.
Mungana, Chillagoe Rail. line. *See maps*, Pls. 8, 9, 22.

Copper—*continued:*

Copper Fields and Mining Centres—*continued:*

Munna, nr. Kilkivan. *See maps*, Pls. 4, 5.
New Moonta, nr. Mt. Perry. *See maps*, Pls. 4, 5, 35.
O.K., nr. Chillagoe. *See maps*, Pls. 8, 9, 22.
Ortona, nr. Gilberton, Etheridge G.F. *See maps*, Pls. 8, 9, 22.
Pine Vale, nr. Mackay. *See maps*, Pls. 14, 15.
Rawbelle, nr. Eidsvold. *See maps*, Pls. 4, 5.
Redcap, nr. Mungana Rail. (Chillagoe line). *See map*, Pls. 8, 9, 22.
Sodawater Cr., nr. Ravenswood. *See maps*, Pls. 16, 17.
Stanthorpe. *See maps*, Pls. 12, 13, 30.
Sundown, nr. Stanthorpe. *See maps*, Pls. 12, 13, 30.
Tartana, nr. Chillagoe. *See maps*, Pls. 8, 9, 22.
Teebar, nr. Boompa Stn. (Gayndah line). *See maps*, Pls. 4, 5.
Texas, nr. Southern border. *See maps*, Pls. 12, 13, 30.
Wolca, nr. Mt. Perry. *See maps*, Pls. 4, 5.
Zillmanton, nr. Chillagoe. *See maps*, Pls. 8, 9, 22.

COPPER VALUES: *See* Table under Metal Values in London for maximum and minimum prices since the year 1892.

DISCOVERIES: Copper was first discovered in 1862 at Peak Downs, at Cloncurry in 1867, Mt. Perry in 1869, Mt. Flora and Mt. Orange in 1871, Glassford Creek in 1893, and Mt. Chalmers in 1896. For other localities, *see under* Discoveries, separate heading.

STATISTICAL NOTES: The world's production of copper from the years 1881 to 1910 amounted, approximately, to 12,839,697 tons. The world's yield of copper for the year 1910 was estimated to be 852,947 tons, of which amount Australia produced 40,314 tons, a percentage of 4·80. The yield of copper in Queensland for the same year was 16,387 tons, this being equal to 40·65 per cent. of the output of Australasia, and 1·92 per cent. of the world's production for that year.

The Mt. Morgan Mine now produces large quantities of copper ore from an irregular deposit of great extent. The yield for 1912 amounted to 7058·50 tons, valued at £516,000. This is only 1,855 tons short of being half of that year's production of the State, and is equal to 30·53 per cent. of the total yield for that year. As seen in the statistical tables, Peak Downs (Clermont) has produced the largest amount of copper in Queensland (the copper ore being the output of the celebrated Peak Downs Copper Mine), the field having yielded during the years 1860 to 1912, inclusive, approximately 47,012 tons of copper, which is equivaelnt to 23·97 per cent. of the whole copper yield of the State to end of 1912. Next comes the Herberton and Chillagoe districts, which yielded 34,708 tons of copper during the years 1888 to 1912, equal to 17·68 per cent. of the State's yield to end of 1912.

The output of copper from the different mining centres in Queensland increased from 3,061 tons in the year 1901 to 23,120 tons in the year 1912, the latter yield being valued at £1,698,280. The percentage of copper produced in the year 1912 (which yielded the largest amount for one year), when compared with the whole quantity of copper produced in Queensland, is 11·78 per cent.

The whole State's output of copper to the end of the year 1912 is valued, approximately, at £10,948,399, and as the total value of all minerals in Queensland is £104,009,087, the value of the copper yield equals 10·52 per cent. of the total value. *See statistical tables and diagrams*, Pls. 37, 45, 46, 46A, 51.

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Skertchley (S. B. J.)—G.S.Q. Pubs. Nos. 119, (1897), 120 (1898).

See under Geol. Sur. Pub. List, Supplementary Report List, and Govt. Ming. Jour. List for titles.

1839. Copper. *Assoc.with* Hematite, in lode, in clay shales. *Loc.* Mt. Oxide, on Cr., trib. of Gunpowder Cr., 108 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* **Burke.** *Assay:* Copper = 28 per cent.; Silver = 1 oz. 10 dwt. 1 gr. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 153, p. 9 (1900).

1840. ——. *Assoc.with* Gold, Silver, Galena, in lodes. *Loc.* Woolgar Goldfield, 97 miles (by coach) N. of Richmond Rail. Stn., 404 miles (by rail and road) W.byS. of Townsville. *Co.* Woolgar; *Dist.* Burke. *Ref.* A.R.D.M., p. 42 (1886).

1841. ——. *Assoc.with* Gold, in micaceous schist. *Loc.* Boolboonda Copper Mine, Boolboonda Hill, 3 miles E. of Wombah, 12 miles N.E. of Mt. Perry. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 21, p. 13 (1885).

1841A.——. *Assoc.with* Limonite. *Loc.* Canterbury Copper Mine, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg (Bundaberg and Mt. Perry line). *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

1841B.——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Wild Horse Reef, Scrub Paddock Diggings, 23 miles N.N.E. of Nanango, and 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 29, p. 3 (1886).

1842. ——. *Assoc.with* Cassiterite, Serpentine, and Steatite, in lode. *Loc.* Good Friday Mine, Watsonville, 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe line), 6 miles W. of Herberton. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 13, p. 20 (1883), P.R.S.Q., vol. 15, p. 64 (1900).

1843. ——. Silver Spur Copper Mines, 2 miles W. of Texas, 50 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** *Ref.* *See* List *under* Suppl. Report, No. 118.

1844. ——. *Assoc.with* Cassiterite. *Loc.* Argylla Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 42 (1887).

1845. ——. *Assoc.with* Cassiterite, Bismuth (native), and Ironstone, in lode. *Loc.* Launcelot Tin Mine, Newellton, 9 miles S.W. of Herberton, 10 miles S.E.byS. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 119, p. 27 (1897).

1846. ——. *Assoc.with* Gold, in ferruginous quartz. *Loc.* Albion Reef, Marengo Goldfield, 20 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Yield:* Copper = 11 per cent.; Gold = ½ oz. per ton. *Ref.* G.S.Q. Pub. 5, p. 12 (1879).

1847. ——. Head of Cattle Cr. (on Range), about 32 miles W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* O.M.

1848. ——. *Assoc.with* Gold and Silver. *Loc.* Pine Vale Copper Mine, Pine Vale Cr., 9 miles S.byE. of Eton Rail. Stn. (Mackay line), Mt. Spencer Gold and Mineral Field. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 125, p. 53 (1897), and 229, pp. 12-17 (1910).

1849. ——. Cattle Cr. Run, nr. Wallon Stn., about 112 miles S. of Rockhampton. *Co.* Dawson; *Dist.* **Leichhardt.** *Ref.* O.M.

1850. ——. Tarramba Run, Dawson R., 95 miles S.S.W. of Rockhampton. *Co.* Dawson (*ante*). *Ref.* O.M.

1851. ——. In the Slates, between Santo and Woolein Crs., N. of Cooper's Range, 80 miles S.W. of Rockhampton. *Co.* Ferguson; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 8 (1901).

1852. ——. Kianga Range, Dawson R. Valley, 90 miles S.byW. of Rockhampton. *Co.* Kimberley; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 7 (1901).

1853. ——. Nr. Rookwood, E. of Balcomba Range, 42 miles W.byS. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 9 (1901).

1854. ——. Old Copper Workings, Mt. Mackenzie, W. side of Chine Bluff, 72 miles N.W. of Rockhampton. *Co.* Roper; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 12 (1901).

1855. ——. Por. 7(Par. of Monsildale, 35 miles N.byW. of Esk Rail. Stn (Brisbane Valley line), 102 miles (by rail and road) N.N.W. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Ref.* O.M.

1885A. ——. Head of Kilcoy Cr., 12 miles W. of Woodford. *Co.* Canning; *Dist.* Moreton. *Ref.* A.R.D.M., p. 175 (1902).

1885B. ——. *Assoc.with* Gold and Silver. *Loc.* Taromeo, 20 miles N.N.W. of Kannangur Rail. Stn. (Brisbane Valley br. line), 103 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Assays:* *See* No. 1855A.

1856. ——. *Assoc.with* Gold. *Loc.* Bull Cr., Par. of Ulogie, 36 miles S.E. of Rockhampton. *Co.* Deas Thompson; *Dist.* **Port Curtis.** *Ref.* O.M.

1857. ——. As the colouring substance in Turquoise (blue). Keppel Rocks, Keppel Bay, 17 miles N.E. of Broadmount Rail. Stn. *Co.* Deas Thompson (*ante*). *Ref.* A.R., p. 141 (1908).

1858. Copper. *Assoc.with* Gold, in lode, in greywacke and shale. *Loc.* E. of Green Hill, 40 miles S. of Mackay. *Co.* Murchison; *Dist.* Port Curtis. *Assay:* Gold = 5 dwt. per ton; Copper = 12 per cent. *Ref.* G.S.Q. Pub. 39, p. 10 (1887).

1859. ——. Windah, 32 miles S.W.byW. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* O.M.

1860. ——. In lodes, in micaceous and talcose schists. Duffer Diggings, Gobango Cr., Black Snake Goldfield, 16 miles S.E. of Kilkivan. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 28, p. 4 (1886).

1861. ——. In lode. Mt. Clara Mine, Black Snake, 10 miles S. of Kilkivan. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

1862. ——. *Assoc.with* Chrysotile, in altered basalt. *Loc.* Mt. Coora, Black Snake, 8 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, pp. 4 and 7 (1886).

1863. ——. In lode. Peak Lode, Black Snake, 10 miles S. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

1864. ——. In lode, in limestone. Sel. 1199, Mt. Allen, Gigoomgan Run, 35 miles W.S.W. of Maryborough. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

1865. ——. Munro Cr., Goomgan, 20 miles S.W. of Tiaro Rail. Stn. (North Coast line). *Co.* Lennox (*ante*). *Ref.* O.M.

1866. ——. Nr. Spring Cr., Par. of Gigoomgan, 35 miles W.S.W. of Maryborough. *Co.* Lennox (*ante*). *Ref.* O.M.

——. - antimony ores. *See* Bournonite, Chalcostibite, Tetrahedrite.

——. arsenates. *See* Olivenite.

——. (arsenical). *See* Tetrahedite.

Copper (black ore). *See* Tenorite.

Copper "Carbonates." *See also* Aurichalcite, Azurite, Malachite.

1867. —— ——. *Assoc.with* Redruthite, in lode. *Loc.* Argylla Copper Freehold, Argylla Cr., 40 miles W. of Cloncurry. *Co.* Argylla; *Dist* **Burke.** *Assays:* Northern Cutting—Copper = 15·95 per cent.; Silver = 2 dwt. 22 gr. per ton; Gold = trace. Southern Cutting—Copper = 35·2 per cent.; Silver = 9 dwt. 2 gr. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 153, p. 8 (1900).

1868. —— ——. *Assoc.with* Silver, Copper (native), Cuprite, Massicot, Antimony, and Graphite (traces), in calcite lode, in siliceous and talcose shales. Dugald Mine, Dugald R., 45 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 10, p. 3 (1885).

1869. —— ——. In quartz. Lease (21), 2 miles W. of Dugald R., 47 miles N. of Cloncurry. *Co.* Argylla (*ante*). *Assay:* Copper = 15 per cent.; Silver = 16 oz. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 153, p. 7 (1900).

1870. —— ——. In quartz. Yamamilla Copper Freehold, Hamilton Group, Yamamilla Cr., trib. of Prospectors' Cr., 43 miles W.N.W. of Cloncurry. *Co.* Argylla (*ante*). *Assay:* Copper = 9·9 per cent.; Silver = 3 oz. per ton; Gold = trace. *Ref.* G.S.Q. Pubs 153, p. 8 (1900), and 215, p. (1908).

1871. —— ——. *Assoc.with* Calcite. *Loc.* Contra Lode, ¼-mile S. of Gt. Australian Copper Mine, Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

1872. —— ——. *Assoc.with* Redruthite, Cuprite, Bornite, Chrysocolla, and Ironstone. *Loc.* Mary Douglas (Pumpkin) Gully Copper Leases, Mt. Douglas, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 153, pp. 6 and 7 (1900).

1873. —— ——. *Assoc.with* Gold and Tehahedrite. *Loc.* Flying Dutchman Mine, Pumpkin Gully, 12 miles S. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

1874. —— ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Victoria 1 N. Claim, Bowerbird Goldfield, 70 miles N.W. of Cloncurry. *Co.* Brahe or Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 2 (1898).

1875. —— ——. *Assoc.with* Cuprite, in chlorite, slate, and quartz. *Loc.* Reef on Cone Cr., trib. of Duck Cr., about 23½ miles S.W.byW. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 5 (1885).

1876. —— ——. *Assoc.with* Hematite and Tetrahedrite (?), in chloritic slate. *Loc.* Sel. (2458), nr. Chinaman Group, Duck Cr., 23½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 10, p. 5 (1885).

1877. —— ——. *Assoc.with* Cuprite and Ironstone, in quartz, in schist country. *Loc.* Mt. Cuthbert, 19 miles S.W. of Coolullah, Leichhardt R., 63 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 153, p. 9 (1900).

For further Cloncurry references, *see* Nos. 1907 to 1909.

1878. —— ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Lady Francis Mine, Gebangle, 3 miles up Yarrabil Cr., 12 miles N.W. of Degilbo Rail. Stn. (Gayndah line), 70 miles (by rail and road) W. of Maryborough. *Co.* Bowen; *Dist.* **Burnett.** *Yield:* Gold = 2 oz. per ton. *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

1879. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz vein. *Loc.* Victoria Claim, Gebangle (*ante*). *Ref.* G.S.Q. Pub. 60, p. 4 (1890).

1880. —— ——. *Assoc.with* Gold and Silver. *Loc.* Harper's Hill, Mt. Drain, nr. Mt. Perry. *Co.* Bowen; *Dist.* Burnett. *Yield:* Silver, 44 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 27 (1897).

1881. —— ——. *Assoc.with* Magnetite and Calcite, in gossany lode. *Loc.* W. of Granite Ridge, nr. Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn (Gayndah br. line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. (1890).

1882. —— ——. *Assoc.with* Gold and Bismite, in quartz. *Loc.* Tunnel Reef, Maid of Erin Claim, Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pubs 43, p. 3 (1887), and 125, p. 37 (1897).

1883. —— ——. *Assoc.with* Scorodite, in siliceous and ferruginous ore. *Loc.* Arbouin Copper Lodes, 18 miles W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* A.R.D.M., 1898, pp. 94, 95.

1883A.—— ——. *Assoc.with* Gold and Limonite, in quartz. *Loc.* Trafalgar Reef, 3½ miles S.E. of Ebagoolah, Hamilton Goldfield. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, pp. 13, 14 (1901).

1884. —— ——. *Assoc.with* Magnetite and Cerussite, in schistose rock. *Loc.* Lynd Copper Mine, Einasleigh R., junction with Copperfield R., 32 miles E.N.E. of Charleston, Etheridge Goldfield. *Co.* Copperfield; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 21 (1898).

1885. —— ——. *Assoc.with* Galena, in lode. *Loc.* Einasleigh R., 10 miles from Einasleigh Rail. Stn. (Etheridge line), 110 miles (by rail and road) S.S.W. of Almaden Rail. Stn. (Chillagoe line). *Co.* Gilbert; *Dist.* Cook. *Ref.* O.R.

1886. —— ——. *Assoc.with* Gold, Copper Pyrites, and Chalcanthite. *Loc.* Elektron Silver Mine, Caledonia Cr., Goldsmith Cr., 24 miles S.S.E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

1887. —— ——. *Assoc.with* Cassiterite. *Loc.* Eureka Cr., nr. Stannary Hills Rail. Stn (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 39 (1897).

1888. —— ——. *Assoc.with* Gold, Galena, and Calcite, in quartz. *Loc.* Black Ball Reef, Hodgkinson Goldfield, 19 miles (by coach) from Dimbulah Rail. Stn. (Cairns line), 92 miles (by rail and road) W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson (*ante*). *Ref.* G.S.Q. Pub. 16, p. 6 (1884).

1889. —— ——. *Assoc.with* Native Copper, Cassiterite, and Wolfram, in lode. *Loc.* Argyll Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn., 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 25 (1883).

1890. —— ——. *Assoc.with* Cassiterite, Mispickel, Wolfram, Scheelite, and Iron Pyrites, in lode. *Loc.* Chance Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 119, p. 18 (1897).

1891. —— ——. *Assoc.with* Copper Pyrites, Chalcanthite, Iron Pyrites, Mispickel, Marcasite, Cassiterite, Wolfram, Limonite, Red and Yellow Ochre. *Loc.* Try Again and Chance Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883), and P.R.S.Q., vol. 4, p. 52 (1887).

1892. —— ——. Roseberry Mine, Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

1893. —— ——. *Assoc.with* Minium and Cerussite, in lode. *Loc.* Johnson and Smith's Mine, Dargalong, 7 miles S. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

1894. —— ——. *Assoc.with* Minium, Anglesite, Massicot, Cerussite, and Galena, in gossan. *Loc.* Pandora Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

1895. —— ——. *Assoc.with* Hematite. *Loc.* W. of Boomerang Mine, Marble Cr., 1 mile W. of Calcifer Rail. Stn. (Chillagoe line), 133 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 8 (1891).

1896. Copper "Carbonates." *Assoc.with* Galena and Anglesite, in lode. *Loc.* New Moon Mine, Muldiva, 8 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd (*ante*). *Assay:* Silver = 269 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

1897. —— ——. *Assoc.with* Tenorite and Hematite, in lode. *Loc.* Oruba Mine, 2 miles E. of Zillmanton Rail. Stn. (Chillagoe line), 142 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd (*ante*). *Ref.* G.S.Q. Pub. 134, p. 9 (1898).

1898. —— ——. *Assoc.with* Redruthite, in ferruginous quartz. *Loc.* P.P. Area No. 2 Otho Camp, 4 miles N.W. of Calcifer Rail. Stn. (Chillagoe line), 137 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd (*ante*). *Ref.* G.S.Q. Pub. 134, p. 10 (1898).

1889. —— ——. *Assoc.with* Redruthite and Cerussite, in gneiss and basalt. *Loc.* Between Brooklands No. 2 and No. 3, Junction Cr., br. of Einasleigh R., 30 miles S. of Fossilbrook. *Co.* Tate; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 20 (1898).

1900. —— ——. *Assoc.with* Gold, Redruthite, and Cuprite, in lode. *Loc.* Percy R., 5 miles above junction of Gilbert R., Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Assays:* Copper = 59 and 54 per cent. *Ref.* G.S.Q. Pub. 151, p. 13 (1900).

1901. —— ——. *Assoc.with* Minium, Cerussite, and Limonite, in lode, in slate, greywacke, and quartzite. *Loc.* Monte Video Mine, Ashton and Bowler Crs., 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Wrotham; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 15 (1898).

1902. —— ——. *Assoc.with* Cassiterite and Mispickel, in lode. *Loc.* Nundubbermere Run, 13 miles S.W. of Stanthorpe. *Co.* Bentinck. *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 40, p. 4 (1887).

1903. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Galena, Ironstone, Manganese-dioxide, and Zinc-Blende, in lode. *Loc.* Pikedale Silver Mine, Woolshed Gully, Pikedale Head Stn., 20 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 87 (1898).

1904. —— ——. Block 826 and 827, 2 miles N.W. of Pikedale Head Stn., 21 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 95 (1898).

1905. —— ——. *Assoc.with* Gold, Silver, and Iron Pyrites, in quartz reef. *Loc.* Sel. 24, nr. Sundown Cr., Severn R., 11 miles W.S.W. of Ballandean Rail Stn. (Main line), 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay:* Gold, 18 dwt. per ton; Silver, 16 oz. per ton. *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

1906. —— ——. *Assoc.with* Redruthite, Galena, Cerussite, and Anglesite, in gossan. *Loc.* Silver King Mine, 3 miles N. of Silver Spur Mine, nr. Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Contents:* Silver = 26 oz. per ton. *Ref.* G.S.Q. Pub. 120, p. 94 (1898).

1907. —— ——. *Assoc.with* Redruthite, in quartz lode. *Loc.* Lease 54, Pilgrim's Cr., trib. of Burke R., 60 to 70 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Assay:* Copper = 47·57 per cent; Silver = 7 oz. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 153 (1900).

1908. —— ——. In limestone. *Loc.* Lease 55, Pilgrim's Cr. (*ante*). *Assay:* Copper = 38 per cent. *Ref.* G.S.Q. Pub. 153, p. 6 (1900).

1909. —— ——. *Assoc.with* Redruthite, in siliceous lode. *Loc.* Lease 98, Pilgrim Cr. (*ante*). *Assay:* Copper = 27·1 per cent.; Silver = 6 oz. 15 dwt. 22 gr. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 153, p. 6 (1900).
For other Cloncurry references, *see* Nos. 1867-1877.

1910. —— ——. *Assoc.with* Galena, in ferruginous gossan, in slate country. *Loc.* Dunn's Tunnel Claim, Dry R., br. of Wild R. (Upper Herbert), 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

1911. —— ——. *Assoc.with* Galena, Cerussite, Massicot, and Ironstone, in gossan and quartz. *Loc.* Silver Streak Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

1912. —— ——. O'Loan and Party's Lease, Mt. Garnet, Return Cr., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 125, p. 33 (1901).

1913. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, and Zinc-Blende, in lode. *Loc.* Comstock (Stockholm) Reef, Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 49 (1887), and G.S.M.

1914. —— ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Mt. Leyshon Mine, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* W.C.T.

1915. —— ——. *Assoc.with* Gold, Silver, Redruthite, Galena, and Iron Pyrites, in quartz. *Loc.* Main's Reef, Old Homestead Diggings, 46 miles (by rail) W.S.W. of Charters Towers (Gt. Northern line). *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 11 (1891), and G.S.M.

1916. —— ——. *Assoc.with* Gold. *Loc.* Manchester Reef, Marengo Goldfield, 20 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 5, p. 12 (1879).

1917. —— ——. *Assoc.with* Selenite. *Loc.* Manchester Reef, Marengo Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

1918. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Yellow Ochre, in quartz. *Loc.* Seymour's Reef, Marengo Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

1919. —— ——. Mt. Greentop, 15 miles W.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 4, p. 4 (1879).

1920. —— ——. *Assoc.with* Cerussite, in kaolin. *Loc.* Stockyard Cr. Silver Mine, Basalt R., 18 miles N.W. of Hillgrove Head Stn., 70 miles N.N.W of Charters Towers. *Co.* O'Connell; *Dist.* Kennedy North. *Assays:* Silver = from 3 oz. to 966 oz.; Copper = from 8 per cent. to 31 per cent. *Ref.* G.S.Q. Pub. 94, p. 12 (1893).

1921. —— ——. *Assoc.with* Prehnite. *Loc.* Pelican Cr., br. of Bowen R., Bowen R. Coalfield, 50 miles S.W. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1922. —— ——. *Assoc.with* Prehnite, in cavities of amygdaloidal trap rock. *Loc.* Strathmore Cr., Bowen R. Coalfield (*ante*). *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1923. —— ——. *Assoc.with* Galena, Cerussite, Chrysocolla, Manganese-dioxide, and Garnet, in quartz. *Loc.* Black Star Lease (116), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

1924. —— ——. *Assoc.with* Bornite, Cerussite, and Galena, in lode. *Loc.* Blue Bell Lease (226), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1903).

1925. —— ——. *Assoc.with* Galena, Cerussite, and Manganese-dioxide, in kaolin. *Loc.* Bonnybrook Lease (178), Ewan, Running R., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), and 82, p. 4 (1892).

1926. —— ——. *Assoc.with* Cuprite and Redruthite, in garnet, quartz, kaolin, and gossan. *Loc.* Day Dawn Lease (170), Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver = 265 oz. per ton; Copper = 21·6 per ent.; Gold = trace. (2) Silver = 8 oz. per ton; Copper = 33 per cent. *Ref.* G.S.Q. Pub. 82, p. 4 (1892).

1927. —— ——. *Assoc.with* Chrysocolla, Bornite, and Mispickel, in chloritic matrix. Ingola Lease (177), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

1928. —— ——. *Assoc.with* Cerussite and Ironstone, in gossan and kaolin lode. *Loc.* Junction Lease (181), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

1929. —— ——. *Assoc.with* Cerussite and Ironstone, in garnet, kaolin, and gossan. *Loc.* Junction South Lease (180), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

1930. —— ——. *Assoc.with* Cassiterite, Bismuth Ore, and Ironstone, in quartz. *Loc.* Achilles Lease (252), Mt. Brown, Butterfly Gully, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 9 (1892), and G.S.M.

1931. —— ——. *Assoc.with* Galena, Cerussite, Hematite, and Limonite, in gossan. *Loc.* Mt. Brown Lease (183), Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Reported Assays:* Bulk Silver = 10 oz. per ton; Concentrates Silver = 183 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

1932. —— ——. *Assoc.with* Galena, Minium, Cerussite, Chrysocolla, Hematite, and Zinc-Blende, in gossan. *Loc.* White Wings P.A., Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

1933. —— ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Linarite, Cerussite, Manganese-dioxide, Zinc-Blende, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet, in lode. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field ((*ante*). *Ref.* G.S.Q. Pub. 82 (1892).

1934. Copper " Carbonates." *Assoc.with* Copper Pyrites, Bornite, Cuprite, Tenorite, Iron Pyrites, Ironstone, Galena, and Zinc-Blende, in lode. *Loc.* Mt. Thekla Copper and Silver-Lead Mines, 4 miles N. of Ewan, Kangaroo Hills Mineral Field (*ante*). *Assay Averages:* Silver = 26 oz. per ton; Copper = 22 per cent. *Ref.* G.S.Q. Pub. 167, p. 7 (1892).

1935. —— ——. *Assoc.with* Galena, in quartz. *Loc.* Pinnacles Extended Lease (220), 3 miles S.W. of Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

1936. —— ——. *Assoc.with* Calcite, Chlorite, and Garnet, in lode. *Loc.* Running R. N. Lease (164), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

1937. —— ——. *Assoc.with* Ironstone and Cerussite, in lode. *Loc.* Running R. South Lease (163), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 4 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

1938. —— ——. *Assoc.with* Copper Pyrites, Bornite, Cuprite, Native Silver, and Galena, in lode. *Loc.* True Blue Lease (161), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

1939. —— ——. *Assoc.with* Cerussite, Manganese-dioxide, and Ironstone, in schist. *Loc.* White Star Lease (160), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

1940. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Eureka Reef, Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 5, p. 10 (1879), and 88, p. 4 (1893).

1941. —— ——. *Assoc.with* Gold and Iron Pyrites. *Loc.* Faith (Just-in-Time) Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 8 (1879).

1942. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz. Marquis Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 3 (1879).

1943. —— ——. *Assoc.with* Gold, in quartz. New Zealand Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 4 (1879).

1944. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* S.W. of Just-in-Time Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 8 (1879).

1945. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Mispickel, in quartz. *Loc.* Welcome Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 5 (1879).

1946. —— ——. *Assoc.with* Gypsum. *Loc.* Jack's Cr., Bowen R., 55 miles S.byW. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 4, p. 24 (1879).

1947. —— ——. *Assoc.with* Gypsum. *Loc.* Low ridge E. side of Jack's Cr., Bowen R. (*ante*). *Ref.* G.S.Q. Pub. 4, p. 24 (1879).

1948. —— ——. *Assoc.with* Calcite. *Loc.* McDougall's Head Station, Bowen R., 60 miles S.W. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

1949. —— ——. *Assoc.with* Copper oxide, Hematite, and Manganese-dioxide, in lode. *Loc.* Peak Downs Copper Mine, Copperfield, 4 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* (and *Assay*): G.S.Q. Pub. 27, p. 7 (1886).

1950. —— ——. *Assoc.with* Copper Pyrites, in lode. *Loc.* Mt. Flora, Bee Cr., 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 181, p. 11 (1903).

1951. —— ——. *Assoc.with* Redruthite and Tenorite, in slate country. *Loc.* Balcomba Range, nr. Mackenzie R., 24 miles N. of Duaringa Rail. Stn. (Central line), 90 miles (by rail and road) W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 159, p. 20 (1901).

1952. —— ——. *Assoc.with* Gold (traces), Silver, Tile Ore, Minium, and Steatite, in ferruginous quartz lode. *Loc.* 4 miles N.W. of junction of Tierawoomba and Boothill Creeks, 53 miles S.S.W. of Mackay. *Assay: See* No. 1952. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref* G.S.Q. Pub. 39, p. 7 (1887).

1953. —— ——. *Assoc.with* Copper Pyrites, in lode. *Loc.* North Star Copper Area, Cressbrook Cr., 12 miles N. of Esk Rail. Stn. (Brisbane-Valley line), 79 miles (by rail and road) W.N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 169, p. 6 (1901).

1954. —— ——. *Assoc.with* Copper oxide, in felspar porphyry. *Loc.* Pinnacle Copper Workings, 17 miles W. of Bompa, 48 miles S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* (and *Assay*): G.S.Q. Pub. 159, p. 8 (1901).

1955. —— ——. Threadenham's Sel., Marblestone, nr. Boyne R., 20 miles S. of Gladstone. *Co.* Clinton (*ante*). *Assay:* Copper = 3·5 per cent. *Ref.* A.R., p. 54 (1906).

1956. —— ——. *Assoc.with* Gold, Garnet, Rock Crystal, and Calcite. *Loc.* Mt. Grim, 3½ miles W.S.W. of Mt. Alma Stn., 31 miles W.S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 24 (1904).

1957. —— ——. *Assoc.with* Gold, Iron Pyrites, and Galena. *Loc.* Lamona Claim, Busby's Gully, Ulam Goldfield, 3 miles S. of Toonda Rail. Stn. (North Coast line), 44 miles (by rail and road) W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 99, p. 9 (1894).

1958. —— ——. *Assoc.with* Chrysocolla, in lode. *Loc.* On hill, nr. beach, 3 miles N. of Marion Cr., 39 miles S. of Mackay. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 39, p. 10 (1887).

1959. —— ——. In iron gossan. Bushnell's Mine, Limestone Cr., Dee R., 4 miles E. of Mt. Morgan Rail. Stn. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 132, p. 14 (1898).

1960. —— ——. *Assoc.with* Copper Pyrites, Mispickel, Ironstone, and Mica (black), in quartz lode. *Loc.* Copper Mine, Dee R., above Dundee, 20 miles S.S.W. of Mt. Morgan, 44 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 155, p. 8 (1901).

1961. —— ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Manganese-dioxide, Magnetite, and Hematite, in lode. *Loc.* Callide or 5-Mile Creek Copper Mines, Kroombit, 50 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 194 (1904), and G.S.M.

1962. —— ——. *Assoc.with* Gold, Iron Pyrites, and Ironstone, in serpentine and quartz. *Loc.* Mt. Morgan N. Mine, Mt. Morgan (late Crocodile Cr.) Goldfield, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 132, p. 8 (1898).

1963. —— ——. *Assoc.with* Magnetite, in lodes, in serpentinous rock. *Loc.* King's Copper Sel., Rainbow Cr., Callide Cr., 52 miles S.W.byW. of Gladstone. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 80, p. 1 (1891).

1964. —— ——. *Assoc.with* Hematite, in gossan. *Loc.* Mt. Coora S. Lode, Black Snake, 8 miles S. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

1965. —— ——. *Assoc.with* Gold, Silver, Native Copper, and Galena, in lode. *Loc.* Mt. Terrible Lode, Black Snake (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

1966. —— ——. *Assoc.with* Gold, Magnetite, and Hematite, in quartz reef. *Loc.* Rose, Shamrock, and Thistle, Black Snake (*ante*). *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

1967. —— ——. *Assoc.with* Cinnabar, in calcite and quartz, in granite dyke. *Loc.* Commotion Lode, Sel. 2447, 5 miles W. of Kilkivan, 53 miles (by rail and road) W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 79, p. 2 (1892).

1968. —— ——. *Assoc.with* Cuprite, in quartz reef. *Loc.* S. of Mackay's Store, Kilkivan, 48 miles (by rail) W. of Gympie (North Coast line). *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 4 (1886).

1969. —— ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, Limonite, and Zinc-Blende, in gossan veins. *Loc.* Mt. Ruby, ½-mile W.N.W. of Glenbar Head Stn., 20 miles W. of Tiaro Rail. Stn. (North Coast line). *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

1970. —— ——. *Assoc.with* Copper Oxide. *Loc.* St. Aignan (Misima) Island, Louisiade Archipelago, 379 miles E.byS. of Port Moresby, **Brit. New Guinea.**

Copper Deposits. Clairview, St. Lawrence. *Min.Ref.* Azurite, *see* 251A; Copper (native), 2011; Cuprite, 2478; Malachite, 6368.

Copper Smelting Works: *See under* separate heading "Smelting Works in Queensland."

Copper Glance. *See* Redruthite.

Copper (grey) Ores. *See* Bournonite, Redruthite, Tetrahedrite.

—— King Mine, 41½ miles S. of Bowen. *Min.Ref.* Cuprite, *see* 2458; Gold, 4073; Hematite, 4740; Malachite, 6289.

—— lead Ores. *See* Bournonite.

—— Lode. Pumpkin Gully, Cloncurry. *Min.Ref.* Chalcostibite, *see* 1408; Cuprite, 2390; Malachite, 6087; Tetrahedrite, 7753.

Copper (native). *Compo.*, pure copper. *Colour*, copper-red. Metallic. Commonly arborescent. *H.* = 2·5. *Sp.gr.* = 8·8.

1971. —— ——. *Assoc.with* Cuprite, Tenorite, and Calcite. *Loc.* Dugald Mine, Dugald R., 45 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke**. *Ref.* P.R.S.Q. vol. 4., p. 73 (1887).

1972. —— ——. *Assoc.with* Silver, Cuprite, Tenorite, Copper carbonate, Massicot, Antimony, and Graphite, in calcite lode in siliceous and talcose shales. *Loc.* Dugald Mine, Dugald R. (*ante*). One specimen of native copper weighed 7½ cwt. *Ref.* G.S.Q. Pub. 10, p. 3 (1885).

1973. —— ——. *Assoc.with* Cuprite, Malachite, and Limonite, in schistose slate and gossan. *Loc.* Two Sports M.F. (2874), Longamundi Group, Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 288 and 289 (1908).

1974. —— —— Slugs. *Assoc.with* Cuprite. *Loc.* Mt. Godkin, nr. Cameron R., 34 miles W. of Cloncurry. *Co.* Argylla (*ante*). Weight of 4 slugs, 18 cwt., 13 cwt., 6¾ cwt., and 5 cwt. *Ref. see* Pl., Q.G.M. Jour., vol. 9, p. 127 (1908).

1975. —— ——. *Assoc.with* Cuprite, in quartz. *Loc.* Oliver Twist M.C., Native Companion Group, Palm Tree Cr., 26½ miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 276 (1908).

1976. —— ——. *Assoc.with* Cuprite, Tenorite, Tetrahedrite, Malachite, and Iron Pyrites, in lode. *Loc.* Gt. Australian Copper M.F., Cloncurry Township. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 14 (1885); 153, p. 3 (1900); 215, pp. 242-250 (1908).

1977. —— ——. *Assoc.with* Cuprite, Malachite, and Limonite, in quartzite, schist, and gossan. *Loc.* M.F. 14, Gt. Australian Group, Cloncurry Township (*ante*). *Ref.* G.S.Q. Pub, 215, pp. 251, 252 (1908).

1978. —— ——. *Assoc.with* Gold, Cuprite, Azurite, and Malachite. *Loc.* Homeward Bound Extd. M.C. 331, Homeward Bound Group, 12 miles E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 4 (1885), and 215, pp. 233, 234 (1908).

1979. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Chrysocolla, Iron Pyrites, Limonite, Turgite, Calcite, and Ferro-Calcite, in quartzite, schist, and limestone. *Loc.* Florence R. Copper Leases, ½-mile W. of Hampden Road, 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 69-78 (1908).

1980. —— ——. *Assoc.with* Redruthite, Cuprite, Malachite, Cyanochalcite (?), Limonite, Calcite, and Ferro-calcite, in granular limestone. *Loc.* Dandy P.A. (297), McPhail Group, 2 miles S. of Florence R., 33 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 76 and 77 (1908).

1980A. —— ——. *Assoc.with* Gold, Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 219-224 (1908).

1980B. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, and Molybdenite, in lode formation. *Loc.* May Graham P.A. (Mt. Wheeler Group), 4 miles W. of Soldier's Cap, about 33 miles (by road) S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 225 (1908).

1981. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Iron Pyrites, and Limonite, in slate. *Loc.* Pioneer Chief M.L. (231), Pioneer Chief Group, Cone Cr., ½-mile N. of Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 123-125 (1908).

1982. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Chrysocolla, Iron Pyrites, and Limonite, in schist, slate, quartzite, and quartz. *Loc.* Banjo M.L. (590), Tambourine Group, Duck Cr., 3 miles N. of Corella Road, 26 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 167, 168 (1908).

1983. —— ——. *Assoc.with* Gold, in quartz leaders traversing graphitic granite. *Loc.* Lady Isabelle Reef, True Blue Mining Centre, 1¾ miles N.W.byN. of Croydon Rail. Stn. (Croydon-Normanton line). *Co.* Surrey; *Dist* Burke. *Ref.* B.D.

1984. —— ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Chrysocolla, and Limonite, in gossany quartz and calcareous sinter. *Loc.* Boundary M.L. (582), Bull Cr. Group, Coollullah Run, 74 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 345, 347 (1908).

1985. —— ——. *Assoc.with* Cuprite, Tetrahedrite, Redruthite, Malachite, Iron Pyrites, Hematite, Magnetite, and Limonite, in schist and quartz. *Loc.* Crusader M.F. (2549), Crusader Group, Coollullah Run, E. of Coppermine Cr., 68½ miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Assay:* Copper = 5·3 per cent. *Ref.* G.S.Q. Pub. 215, pp. 334, 335 (1908).

1985A. —— ——. *Assoc.with* Cuprite, in siliceous ironstone. *Loc.* Jessie's Dream M.L. (397), Jessie's Dream Group, 6-Mile Cr., Leichhardt R., 39½ miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, p. 314 (1908).

1986. —— ——. *Assoc.with* Cuprite, Chrysocolla, and Limonite, in schist and quartzite. *Loc.* Little Wonder M.L. (258), Mighty Atom Group, 6-Mile Cr., 60 miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 310 and 311 (1908).

1987. —— ——. *Assoc.with* Copper Pyrites, Cuprite, Tile Ore, Malachite, and Limonite, in schist, slate, and gossan. *Loc.* Mt. Cuthbert M.L. (107), Mt. Cuthbert Group, 6-Mile Cr., Leichhardt, 19 miles S.W. of Coollullah H.S., 63 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 315-318 (1908).

1988. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tile Ore, Tenorite, Malachite, Iron Pyrites, and Limonite, in slate and gossan. *Loc.* Mt. Metallic R.C. (310), Mt. Metallic Group, Prospector Cr., trib. of Leichhardt R., 52 miles W.N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Assay:* Copper = 39.8 per cent.; Gold = trace; Silver = 1 oz. 16 dwt. per ton. *Ref.* G.S.Q. Pub. 215, pp. 295-297 (1908).

For further Cloncurry references, *see* Nos. 1996-1998.

1989. —— ——. *Assoc.with* Cuprite and Malachite. *Loc.* Caledonia Mine, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg (Bundaberg—Mt. Perry line). *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M.

1990. —— ——. *Assoc.with* Gold, Silver, Cuprite, Tenorite, Malachite, and Azurite. *Loc.* Mt. Cannindah Mine, nr. head of Cabbage Tree Cr., Dawes Range, 13 miles S.W.byS. of Many Peaks Rail. Stn., 71 miles (by rail and road) S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. *Ref.* (and *assays*): G.S.Q. Pubs. 113, p. 7 (1896), and 143, p. 4 (1899).

1991. —— ——. *Assoc.with* Copper carbonate, Cassiterite, and Wolfram, in lode. *Loc.* Argylla Mine, Watsonville, head of James Cr., br. of Walsh R., 7 miles S.S.E. of Stannary Hills Rail. Stn. (Chillagoe line), 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 13, p. 25 (1883).

1992. —— ——. *Assoc.with* Cuprite, Tetrahedrite, Malachite, Azurite, Manganese-dioxide, Hematite, and Selenite, in lode. *Loc.* Griffith Mine, 2 miles S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 69, p. 5 (1891), and 134, p. 11 (1898), and G.S.M.

1993. —— —— in dendritic forms. Paisley Shaft, Lappa Lappa Rail. Junction (Chillagoe and Mt. Garnet lines), 102 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

1994. —— ——. Rosebery Mine, Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

1995. —— ——. *Assoc.with* Gold and Native Silver, in small strings and leaders, in black clay. *Loc.* Noble Is., 74 miles N.W.byW. of Cooktown. *Co.* Melville; *Dist.* Cook. *Ref.* Q.G.M. Jour., p. 263 (1908).

1996. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, and Limonite, in kaolinised rock, schist, and quartz. *Loc.* Italian Copper Lease (689), Lady Fanny Group, 60 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 34 and 35 (1908).

1997. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Atacamite, Limonite, and Calcite, in quartz and chloritic schist. *Loc.* Blue Jacket M.L. (632), Mt. Hope Group, 53½ miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 43, 44 (1908).

1998. —— ——. *Assoc.with* Copper Pyrites and Selenite. *Loc.* Mt. Elliott R.C., No. 3, etc., Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.M.

For other Cloncurry references, *see* Nos. 1971-1988 (minus 1983).

1999. Copper (Native). *Assoc.with* Cassiterite, in serpentine and quartz. *Loc.* Cottaes's Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 5 (1883).

2000. —— ——. *Assoc.with* Cassiterite. *Loc.* Newellton (Silver Valley), 9 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 54 (1900).

2001. —— ——. *Assoc.with* Prehnite. *Loc.* Sonoma Station, 4 miles from Coral Cr., 50 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* B.D.

2002. —— ——. *Assoc.with* Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Manganese-dioxide, Zinc Blende, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

2003. —— ——. *Assoc.with* Chrysocolla and Malachite. *Loc.* E. side of Townsville Road, nr. Dalrymple, 21 miles N.W.byN. of Charters Towers. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* P.R.S.Q. vol. 4, p. 68 (1887).

2004. —— ——. *Assoc.with* Malachite, Azurite, and Chrysocolla. *Loc.* Keelbottom Copper Mine, Mt. Keelbottom, 2 miles N.N.E. of Dalrymple, 21 miles N.W.byN. of Charters Towers. *Co.* Wilkie Gray (*ante*). *Ref.* G.S.M. and P.R.S.V. vol. 4, p. 43 (1887).

2005. —— ——. *Assoc.with* Tenorite, in quartz. *Loc.* Peak Downs Copper Mine, Copperfield, 4 miles S.S.W. of Clermont Rail. Stn. (Clermont-Blair Atholl br. line). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* Q.M.

2006. —— ——. *Assoc.with* Malachite and Azurite, in epidote rock. *Loc.* on hill, W. br. of Murray Cr., Collaroy, 25 miles N.W. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Assay:* Copper = 2·4 per cent. *Ref.* G.S.Q. Pub. 141, p. 4 (1898).

2007. —— ——. In tuffaceous shales, Balcomba Stn., 24 miles N. of Duaringa Rail. Stn. (Central line), 90 miles (by rail and road) W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* B.D.

2008. —— ——. *Assoc.with* Native Silver and Malachite, in lode. *Loc.* Red Queen Mine, nr. Taromeo, 68 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 159, p. 25 (1901).

2009. —— ——. *Assoc.with* Copper Pyrites, Cuprite, Tile Ore, Malachite, Azurite, Iron Pyrites, Magnetite, Hematite, Limonite, and Calcite, in lode. *Loc.* Many Peaks Copper Mines, Deception Cr., 58 miles (by rail) S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pubs. 150, p. 8 (1900), and 194, p. 28 (1904).

2010. —— ——. *Assoc.with* Gold, and with Copper ores, in quartz reef. *Loc.* Alliance Mine, Morinish Goldfield, 25 miles N.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* Q.M.

2011. —— ——. *Assoc.with* Cuprite, Malachite, and Azurite, in epidote. *Loc.* Copper Deposits, Clairview Cr., 12 miles N. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 141, p. 4 (1898).

2011a. —— ——. *Assoc.with* Cuprite, Telluride ore, and Ironstone, in schist. *Loc.* Stanage Point, nr. Broadsound, 37 miles E.N.E. of St Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* B.D.

2012. —— ——. *Assoc.with* Gold, Silver, Copper Pyrites, Redruthite, Cuprite, Malachite, Azurite, Molybdite, Galena, Iron Pyrites, and Ironstone, in breccia, granite rock, and sandstone. *Loc.* Moonmera Copper Mines, Razorback Ranges, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist* Port Curtis. *Ref.* G.S.Q. Pubs. 143, p. 27 (1899), and 195, pp. 18-20 (1904).

2013. —— ——. Old Dee Copper Mine, 3 miles N.E. of Mt. Morgan. *Co.* Raglan (*ante*). *Ref.* Q.M.

2014. —— ——. *Assoc.with* Copper Carbonate, and Galena. *Loc.* Mt. Terrible Lode, Black Snake, 10 miles S. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

2015. —— ——. *Assoc.with* Ironstone, in chloritic rock. *Loc.* Lady Flora Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane (North Coast line). *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 52, p. 445 (1889).

2015a. **Copper Ore.** Roberts Group of Copper Mines, N.E. of Soldier's Cap, 24 miles S.E. of Cloncurry. *Co.* Allison; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, p. 226 (1908).

2016. —— ——. In slate. Cloncurry Hills, between McKinlay and Cloncurry, about 20 miles S. of Cloncurry. *Co.* Allison (*ante*). *Assay:* Gold = 13 oz. per ton; Copper = 6.2 per cent. *Ref.* A.R. p. 100 (1907).

2016A. —— —— in quartz and gossan. Enquiry M.L. (265). Enquiry Group, Green's Cr., Corella R., 33 miles W.S.W. of Cloncurry. *Co.* Argylla. *Dist.* Burke. *Ref.* G.S.O. Pub. 215, p. 216 (1908).

2016B. —— ——. Jubilee M.L. (460), Jubilee Group, Corella R. (*ante.*). *Ref.* G.S.Q. Pub. 215, p. 213 (1908).

2016C. —— ——. *Assoc.with* Iron Pyrites in lode. *Loc.* Rosebud Group of Copper Mines, Corella R. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 212 and 213 (1908).

2016D. —— ——. In gossan. Mt. Lidster Group of Copper Mines, Corella R., 34 miles W. of Cloncurry. *Co.* Argylla. *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 217 (1908).

2016E. —— ——. Cabbage-Tree, M.F. (3072), Cabbage-Tree Group, 44½ miles N.N.W. of Cloncurry. *Co.* Granada. *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 290 (1908).

2017. —— ——. In lode. Sels. 2457 and 2456, Duck Cr., 25 miles S.S.W. of Cloncurry. *Co.* Selwyn. *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 6 (1885).

2017A. —— ——. In quartz. Elder M.L. (415), and Three Jokers M.L. (463), Elder Group, Elder Cr., 12 miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 231 (1908).

2018. —— ——. *Assoc.with* impure Graphite, in shale. *Loc.* Hampden Mine, 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* (and assay), G.S.Q. Pub. 203, p. 11 (1906), and A.R., p. 44 (1906).

2018A. —— ——. Lady South M.L. (297), Lady South Group, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 209 (1908).

2018B. —— ——. Leases (383, 384, 385, and 412), Leviathan Group, Martin Cr., 18 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 228 (1908).

2019. —— ——. *Loc.* Sel. 3 and 4, Malbon R., 30 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref* (?)

2019A. —— ——. In chloritic schist. Mt. McCabe Group, Martin Cr., 24 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 227 (1908).

2019B. —— ——. in lode. Surprise Group of Copper Mines, between Pinnacles and Prospector Creeks, 31 to 33½ miles N.W. of Cloncurry. *Co.* Tewinga. *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 303 (1908).

2020. —— ——. New Moonta Mine, Boolboonda, 12 miles N.E. of Mt. Perry. *Co.* Bowen. *Dist.* **Burnett.** Analysis of Bulk Sample covering a month's production: Copper = 9·6, Silica = 40·6, Iron = 23·2, Sulphur = 17·8, Alumina = 7·2, Zinc = 1·36, Lead = 0·80 per cent.; Silver = 15 oz., Gold = 6 dwt. 4 gr. per ton.

2021. —— ——. Mt. Perry Copper Mine, Mt. Perry, 67 miles (by rail), S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). Analysis of Bulk Sample covering a month's production: Copper = 12·5, Silica = 47·2, Iron = 19·0, Sulphur = 18·7, Alumina = 2·0, Zinc = 0·38 per cent., Lead = *nil*; Silver = 4 oz. 14 dwt., Gold = 2 gr. per ton.

2022. —— ——. Virgin's Refuge Mine, nr. Harper's Hill, Mt. Perry (*ante*). *Ref.* G.S.Q. Pub. 125, p. 53 (1897).

2023. —— ——. Normanby Copper Mine, Mt. Perry (*ante*). Analysis of Bulk Samples covering a month's production: Copper = 9·8, Silica = 40·2, Iron 24·7, Sulphur = 24·7, Alumina = 0·7, Zinc = 0·34 per cent.; Silver = 5 oz., Gold = 4 dwt. 6 gr. per ton.

2024. —— ——. Caledonia Copper Lode, Paradise Goldfield, 2 miles below mouth of Yarrabil Cr., 8 miles N.W. of Degilbo Rail. Stn. (Gayndah Br. line). *Co.* Cook. *Dist.* Burnett. *Ref.* G.S.Q. Pub. 68, p. 5 (1891).

2024A. —— ——. *Assoc.with* Gold and Silver Ores. *Loc.* Rawbelle Copper Mines, 30 miles N.N. W.of Eidsvold. *Co.* Rawbelle. *Dist.* Burnett. *Ref.* B.D.

2024B. —— ——. A1 lode, 4 miles N. of Einasleigh Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Copperfield. *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 234, p. 28 (1911).

2025. —— ——. *Assoc.with* Gold and Marcasite. *Loc.* Havelock Mine, 5 miles S. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert. *Dist.* Cook. *Ref.* G.S.Q. Pub. 219, pp. 12 and 13 (1909), and G.S.M.

2025A. Copper Ore. Teesdale, 10 miles (by rail) S.W. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 234, pp. 26, 27 (1911).

2025B. —— ——. *Assoc.with* Galena. *Loc.* Dorothy Copper Mine, Macmillan Cr., about 24 miles E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 234, p. 28 (1911).

2025C. —— ——. Kaiser Bill Lode, 6 miles S.W. of Einasleigh Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 234, p. 28 (1911).

2025D. —— ——. Newcastle Range, Stockman's Cr., about 8 miles N.W. of Teesdale Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 234, p. 28 (1911).

2026. —— ——. *Assoc.with* Cassiterite, in granite. *Loc.* Caledonia Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail Stn. (Chillagoe line), 6 miles W. of Herberton. *Co.* Hodgkinson. *Dist.* Cook. *Ref.* G.S.Q. Pubs. 13, p. 28 (1883), 119, p. 18 (1897), and 125 (1897).

2027. —— ——. Easter Monday Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 125, p. 51 (1897).

2027A. —— ——. Little River, br. of Gilbert R., 30 miles E. of Croydon. *Co.* Lang; *Dist.* Cook.

2027B. —— ——. Hobson Mine, ½-mile N.W. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd. *Dist.* Cook. *Ref.* B.D.

2028. —— ——. Calumet Copper Mine, Chillagoe, 139 miles (by rail), W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 33 (1897).

2029. —— ——. Christmas Shaft, Chillagoe (*ante*). *Ref.* G.S.Q. Pub. 125, p 33 (1897).

2029A. —— ——. *Assoc.with* Silver (native). *Loc.* Nelly Mine, Chillagoe (*ante*). *Ref.* G.S.Q. Pub. 125; p. 34 (1897).

2030. —— ——. Hensey Mine, 3½ miles S.S.E. of Chillagoe Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Lynd. *Dist.* Cook. *Ref.* B.D.

2031. —— ——. *Assoc.with* Silver. *Loc.* Combination Copper Mine, Halpin's Cr., br. of California Cr., S. of Lappa Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 49 (1900).

2032. —— ——. *Assoc.with* Silver. *Loc.* McIlwraith Lease, Redcap Cr., 142 miles (by rail), W.S.W. of Cairns, Walsh and Tinaroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 125, p. 33 (1897).

2033. —— ——. *Assoc.with* Silver and Galena. *Loc.* Penzance Mine, Redcap Cr., about 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 125, p. 51 (1897).

2033A. —— ——. Gt. Eastern Copper Mine, 14 miles N.E.byN. of Percyville, Etheridge Goldfield. *Co.* Percy. *Dist.* Cook. *Ref.* G.S.Q. Pub. 234, p. 30 (1911).

2033B. —— ——. *Assoc.with* Iron Pyrites and Galena, in porphyry. *Loc.* Mt. Jardine, 12 miles N. of Einasleigh Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Tate. *Dist.* Cook. *Ref.* G.S.Q. Pub. 234, p. 28 (1911).

2033C. —— ——. O.K. Mine, 40 miles N. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Field. *Co.* Wrotham. *Dist.* Cook.

2034. —— ——. *Assoc.with* Cassiterite and Wolfram, in quartz lodes. *Loc.* Severn R., 7 miles W. of Ballandean Rail. Stn., 21 miles (by rail and road) S.S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* B.D.

2034A. —— ——. *Assoc.with* Gold. *Loc.* Glenlyon Run, about 2 miles N. of the homestead, about 45 (by road) S.W.byW. of Stanthorpe. *Co.* Clive. *Dist.* Darling Downs. *Ref.* Q.G.M. Jour., vol. 11, p. 258 (1910).

2035. —— ——. *Assoc.with* Lead Ore. *Loc.* Schlumacher's Mine, Newellton (Silver Valley), 9 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell. *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

2036. —— ——. *Assoc.with* Scheelite. *Loc.* Tierney and McQueen's Wolfram Camp, 8 miles from Nymbool (Smith's Cr.) Rail Stn., 36 miles (by rail and road) N.W.byN. of Lappa Junction (Mt. Garnet line), Walsh and Tinaroo Mineral Fields (*ante*).

2037. —— ——. Cardigan Block No. 2, 16 miles W.S.W. of Ravenswood. *Co.* Murray. *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

2038. —— ——. Star R. Copper Mines, head of Big R., 50 miles W. of Townsville. *Co.* Wilkie Gray. *Dist.* Kennedy North. *Ref.* O.M.

2039. —— ——. *Assoc.with* Silver. *Loc.* Emu Plains Silver Field, Bowen R., 60 miles S. of Bowen. *Co.* Carlisle. *Dist.* **Kennedy South.** *Ref.* L.B. 2, p. 231 (1889).

2040. —— ——. *Assoc.with* Native Silver and Galena. *Loc.* Sunbeam Silver Mine, Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim. *Dist.* Kennedy South. *Ref.* W.E.C.

2041. —— ——. In quartz reef. Ranne's Hill, Gogango Ranges, 30 miles S. of Gogango Rail. Stn. (Central line). *Co.* Pakington. *Dist.* **Leichhardt.**

2042. —— ——. *Assoc.with* Cobalt. *Loc.* Blue Mountain, Funnel Cr., nr. Nebo, 40 miles S.byW. of Mackay. *Co.* Wodehouse. *Dist.* Leichhardt. *Ref.* L.B. 2, p. 231 (1889).

2043. —— ——. In slate. Mt. Gotthard Copper Mines, 8 miles N.E. of Lake Elphinstone Stn., 40 miles W.S.W. of Mirani Rail. Stn. (Mackay line). *Co.* Wodehouse (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 4 (1887), and 228, p. 50 (1910), and O.M.

2044. —— ——. Min. Sels. 1165, 1213, 1751, and 1714, Cressbrook Cr., near Mt. Deongwar, 58 miles N.N.W. of Ipswich. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* O.M.

2045. —— ——. Por. 38, Par. of Dixon, 13 miles E. of Esk Rail. Stn. (Brisbane-Valley line), 70 miles (by rail and road) N.W.byN. of Brisbane. *Co.* Stanley. *Dist.* Moreton. *Ref.* A.R., p. 163 (1908).

2046. —— ——. *Por.* 19, *Par.* of St. John, about 13 miles E. of Esk Rail. Stn. (*ante*). *Ref.* A.R., p. 163 (1908).

2046a. —— ——. *Assoc.with* Gold and Silver. *Loc.* Kilkivan Gold Mine, Black Snake, 10 miles S. of Kilkivan Rail. Stn. (Kilkivan br. line). *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 125, p. 36 (1897).

2046b. **Copper Oxides.** *Assoc.with* Gold and Copper Pyrites. *Loc.* Wonbah Hill, 12 miles (by rail) N.byW. of Mt. Perry Rail. Stn. (Bundaberg-Mt. Perry line). *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M.

2047. —— ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, and Cassiterite, in gossan lode, in greywacke and shale. Crucible Tin and Copper Mine, Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn., 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 13, pp. 21 and 22 (1883).

2048. —— ——. Rosebery Mine, Chillagoe, 139 miles (by rail) W.S.W of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

2049. —— ——. *Assoc.with* Gold, Copper carbonate, Manganese-dioxide, and Hematite. *Loc.* Peak Downs Copper Mine, Copperfield, 4 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 27, p. 7 (1886).

2050. —— ——. *Por.* 49, N. side of Mt. Mee, Woodford, 46 miles N.byW. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Ref.* L.C.B.

2051. —— ——. *Assoc.with* Malachite and Ironstone, in quartz. *Loc.* Black Diamond Mine, Taromeo, 6 miles N.N.W. of Benarkin Rail. Stn. (Brisbane-Valley br. line), 117 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* (and *Assay*): G.S.Q. Pub. 159 (1901).

2052. —— ——. In ironstone lode. *Por.* 1768, *Par.* of Taromeo, 14 miles S. of Nanango, on Nanango Road. *Co.* Cavendish (*ante*). *Average of 4 Assays:* Gold = traces; Silver = 70 oz. 12 dwt. per ton; Copper = 20·6 per cent. *Ref.* A.R., p. 59 (1906).

2053. —— ——. *Assoc.with* Copper carbonate, in porphyry. *Loc.* Pinnacle Copper Workings, 7 miles W. of Bompa Old Stn., 48 miles S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Assay:* Silver = 16 dwt. 8 gr. per ton; Copper = 3·4 per cent. *Ref.* G.S.Q. Pub. 159, p. 8 (1901).

2054. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz and gossan. *Loc.* Gt. Northern Copper Mine, Rosewood, 23 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* G.S.M.

2055. —— ——. *Assoc.with* Manganese-dioxide, Nickel, Cobalt, Rhodonite, Rhodochrosite, in lode. *Loc.* Mt. Coora, Black Snake, 8 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Assays: See* No. 1837. *Ref.* G.S.Q. Pubs. 28 (1886), 38, p. 1 (1887), 48, p. 59 (1888), and 169, pp. 16-19 (1901).

2056. Copper Oxides. Sel. 1217, Gigoomgan Run, 35 miles W.S.W. of Maryborough. *Co.* Lennox (*ante*). *Ref.* L.C.B.

2057. —— ——. *Assoc.with* Copper carbonate. *Loc.* St. Aignan (Misima) Is., Louisdale Archipelago, 379 miles E.byS. of Port Moresby, **Brit. New Guinea.**

—— ——. *See also* Cuprite and Tenorite.

——. Oxy-chloride. *See* Atacamite.

2058. **Copper Phosphate.** Arbouin, 18 miles W. of Mungana Rail. Stn. (Chillagoe line), nr. Walsh R., Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

2059. —— ——. Queenslander Lease, Mt. Redcap, 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

—— ——. *See also* Chalcolite.

——. Purple Ore. *See* Bornite.

Copper Pyrites. *Syn.* Chalcopyrite. *Compo.* Sulphide of copper and iron. *Colour,* brass-yellow, often with an iridescent tarnish. *Streak,* greenish-black. *Lustre,* metallic. Brittle. *H.* = 3·5-4; *Sp.gr.* = 4·1-4·3. *Contents* (*max.*), Copper 34 per cent.

2060. —— ——. *Assoc.with* Redruthite and Limonite. Four miles N.W. of Blackeye Spring, McKinlay, and 68 miles S.E.byE. of **Cloncurry.** *Co.* Allison; *Dist.* **Burke.** *Assay:* Gold = trace; Silver = 1 oz. 5 dwt. per ton; Copper = 26·8 per cent. *Ref.* A.R., p. 107 (1907).

2060A.—— ——. *Assoc.with* Chrysocolla, Malachite, and Limonite, in quartz and slate. *Loc.* Cameronian M.C. (196), Euston Group, Cameron R., 27 miles W.N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p 267 (1908).

2060B.—— ——. *Assoc.with* Malachite, Azurite, Limonite, in quartz and quartzite. *Loc.* Federal R.C. (52), Federal Group, Cameron R., 20 miles W.N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 267 and 268 (1908).

2061. —— ——. *Assoc.with* Tile Ore, Azurite, Malachite, and Limonite, in mica-schist, quartzite, and gossan. *Loc.* Magnet M.L. (450), Longamundi Group, Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 284-286 (1908).

2061A.—— ——. *Assoc.with* Redruthite, Malachite, Limonite, and Actinolite, in gossan and schist. *Loc.* Melba M.L. (319), Melba Group, Corella R., 39 miles W.S.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 210 (1908).

2062. —— ——. *Assoc.with* Redruthite and Chrysocolla, in schist, slate, and quartz. *Loc.* Native Companion R.C. (19), Native Companion Group, Palm Tree Cr., 26½ miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 273 and 274 (1908)

2062A.—— ——. *Assoc.with* Iron Pyrites. *Loc.* Secret Group Copper Leases, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 212 (1908).

2063. —— ——. *Assoc.with* Cuprite and Malachite. *Loc.* Contra Copper Lode, ¼-mile S.W. of Australia Copper Mine, Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

2064. —— ——. *Assoc.with* Gold, Siderite, and Tourmaline, in quartz. Pumpkin Gully, S. of Fisher's Cr., 12 miles S. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 104, p. 4 (1895).

2065. —— ——. *Assoc.with* Gold, Iron Pyrites, and Copper carbonate, in quartz. Victoria No. 1 N. Mine, Bowerbird (Leichhardt) Goldfield, 70 miles N.W. of Cloncurry. *Co.* Brahe or Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 2 (1898).

2066. —— ——. *Assoc.with* Gold, Iron Pyrites, and Malachite, in quartz. Victoria P.C. Mine, Victoria Reef, Bowerbird Goldfield (*ante*). *Ref.* G.S.Q. Pub. 104, p. 2 (1895).

For further Cloncurry references, *see* Nos. 2069 to 2120.

2067. —— ——. *Assoc.with* Iron Pyrites, Cassiterite, Galena, and Zinc-Blende, in chlorite, quartz, and greisen. Brilliant P.C. Mine, Stanhills Tinfield, between 12 and 32 miles S.E. of Croydon. *Co.* Esmeralda; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, p. 6 (1907).

2068. —— ——. *Assoc.with* Azurite, Malachite, Cassiterite, Zinc-blende, and Galena, in chlorite. *Loc.* Comet Mines, N. of Ten-mile Cr., nr. Esmeralda Rd., Stanhills Tinfield (*ante*). *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

2069. —— ——. *Assoc.with* Redruthite, Tile Ore, and Limonite, in slate (?). Eclipse M.L. (571), Eclipse Group, E. of Dromedary Range, N.W. of Donaldson, 68 miles N.byW. of Cloncurry. *Co.* Granada; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 355 and 356 (1908).

2070. —— ——. *Assoc.with* Malachite, Limonite, and Calcite, in gossan and quartz. Iron Duke M.L., Alice Group, 4 miles S.E. of Mt. Start, 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 165, 166 (1905).

2071. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, Chrysocolla, Hematite, Limonite, Turgite, in quartz, calcite, and gossan. *Loc.* Belfast Copper M.L. (303), Belfast Group, 10 ch. S.E. of Cloncurry Rd., 2 miles N.N.E. of Mt. Start, 21 miles S.S.W. of Cloncurry *Co.* Selwyn (*ante*). *Assay:* Copper = 14·8 per cent.; Gold = 1 dwt. per ton; Silver = 1 dwt. per ton. *Ref.* G.S.Q. Pub. 215, pp. 120-122 (1908).

2072. —— ——. *Assoc.with* Redruthite, Tile Ore, Chrysocolla, Hematite, and Limonite, in quartz and ferro-calcite. Policeman Copper M.C. (206), Boomerang Group, Cone Cr., 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 100 and 101 (1908).

2073. —— ——. *Assoc.with* Tile Ore, Malachite, and Azurite, in schist, gossan, and quartz, etc. Celestial Extd. M.C. (195), 2 miles S.S.W. of Mt. Start, Chinaman Group, 23½ miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 148, 149 (1908).

2074. —— ——. *Assoc.with* Cuprite, Tetrahedrite, Malachite, and Antimony. Rainbow Copper Lode, Cone Cr., trib. of Duck Cr., 24 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 56 (1887).

2075. —— ——. *Assoc.with* Tenorite, in quartz and ironstone. Daisy Mine, Daisy Group, Duck Cr., 1½ mile N.N.W. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* A.R., p. 117 (1907).

2076. —— ——. *Assoc.with* Gold, Iron Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Limonite, Calcite, Actinolite, Chlorite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group, Duck Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

2077. —— ——. *Assoc.with* Gold, Redruthite, Tile Ore, Azurite, Malachite, and Limonite, in chloritic schist. *Loc.* Pioneer Copper M.L. (229), Diagonal Group, Duck Cr., 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Assay:* Copper = 18·9 per cent.; Gold = 1 dwt. 4 gr. per ton; Silver = 11 dwt. per ton. *Ref.* G.S.Q. Pub. 215, pp. 132-135 (1908).

2078. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, and Limonite, in schist and quartz. *Loc.* Prospector M.C. (182), Diagonal Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 136-138 (1908).

2079. —— ——. *Assoc.with* Redruthite, Tile Ore, Azurite, Malachite, and Chrysocolla, in gossan, quartz, and quartzite. *Loc.* Chaplain M.L. (—), Eva Group, Duck Cr., 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 158, 159 (1908).

2080. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, and Chrysocolla, in quartz and calcite. *Loc.* Commonwealth M.C. (330), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 158 (1908).

2081. —— ——. *Assoc.with* Redruthite, Tile Ore, Azurite, Iron Pyrites, Limonite, and Calcite, in schist, slate, and quartz. *Loc.* Eva M.L. (250), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 152-154 (1908).

2082. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, Calcite, and Chlorite, in chloritic schist, gossan, and quartzite. *Loc.* Eva Extd. M.L. (283), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 155 (1908).

2083. —— ——. *Assoc.with* Native Copper, Redruthite, Malachite, Chrysocolla, Iron Pyrites, Limonite, Turgite, Calcite, and Ferro-Calcite, in quartzite, schist, and limestone. *Loc.* Florence River Copper Leases, ½-mile W. of Hampden rd., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 69-78 (1908).

2084. —— ——. *Assoc.with* Redruthite, Cuprite, Tenorite, Malachite, Chrysocolla, Iron Pyrites, and Kaolin, in gossan, slates, and diorite. *Loc.* Hampden M.Ls. (244, 245, etc.), Hampden Group, 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 49-60 (1908).

2085. —— ——. *Assoc.with* Tile Ore, Malachite, Azurite, and Limonite, in schist and quartz. *Loc.* Comet M.L. (243), Hilda Group, Slaty Cr., ½-mile W. of Boulia rd., 20 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 182, 183 (1908).

2085A. Copper Pyrites. *Assoc.with* Redruthite, Malachite, Limonite, Manganese-dioxide, and Calcite, in limestone, quartz, and schist. *Loc.* Hilda M.L. (242), Hilda Group (*ante*). *Ref.* G.S.Q. Pub. 215 (1908).

2086. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, and Calcite, in schist and limestone. *Loc.* Mascotte M.C. (319), Hilda Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 184 (1908).

2087. —— ——. *Assoc.with* Cuprite and Ironstone. *Loc.* Mascotte M.C. (319), Hilda Group (*ante*). *Assay:* Gold = 1 dwt. 19 gr.; Silver = 11 dwt. per ton; Copper = 18·6 per cent. *Ref.* A.R., p. 118 (1907).

2087A. —— ——. *Assoc.with* Redruthite, Malachite, and Limonite, in quartz and schist. *Loc.* Just-in-Time 1 E. M.L., 473 (Just-in-Time Group), 1 miles S. of Malbon R., 30 miles S.S.W. of Cloncurry. *Co.* Sewlyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 82 (1908).

2088. —— ——. *Assoc.with* Redruthite, Malachite, Azurite, and Limonite. *Loc.* Erin go-bragh Extd. M.C. (372), 2 miles N. of Florence R., 31 miles S. of Cloncurry, McPhail Group. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 77 (1908).

2089. —— ——. *Assoc.with* Redruthite, Malachite, Chrysocolla, and Limonite, in gossan, quartzite, and schist. *Loc.* McPhail M.L. (474), Florence R., 33 miles S. of Cloncurry, McPhail Group (*ante*).

2090. —— ——. *Assoc.with* Cuprite, Azurite, and Malachite, in lode, in porphyry. *Loc.* Mt. Devoncourt M.L. (550), Cloncurry R., 44 miles S. of Cloncurry, Monitor Group. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 66-68 (1908).

2090A. —— ——. *Assoc.with* Native Copper, Redruthite, Cuprite, and Molybdenite, in lode formation. *Loc.* May Graham P.A., 4 miles W. of Soldier's Cap, about 33 miles (by road) S.E. of Cloncurry, Mt. Wheeler Group. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 225 (1908).

2090A1. —— ——. *Assoc.with* Gold, Copper (native), Malachite, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.) (Mt. Wheeler Group), Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp 219-224 (1908).

2090B. —— ——. *Assoc.with* Iron Pyrites, Calcite, and Tourmaline, in quartz. *Loc.* Shamrock M.C. (184) (Mt. Wheeler Group), Soldier's Cap, 29½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 224 (1908).

2090C. —— ——. *Assoc.with* Redruthite, Tile Ore, Chrysocolla, Hematite, and Hypersthene, in slate and gossan. *Loc.* Springs Peak M.L. (562), Pearl Group, Corella R., 30 miles W.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 189 (1908).

2091. —— ——. *Assoc.with* Tile Ore, Malachite, Azurite, Chrysocolla, Hematite, and Limonite, in slate. *Loc.* Easter Gift M.L. (290), 1 mile E. of Mt. Start, W. of Marabah Township, Pioneer Chief Group, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 127-129 (1908).

2092. —— ——. *Assoc.with* Malachite and Limonite, in schist and quartz. *Loc.* Primrose Extd. M.C. (267), W.N.W. of Mt. Finish, nr. Mt. Start, Pioneer Chief Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 126, 127 (1908).

2093. —— ——. *Assoc.with* Native Copper, Redruthite, Tile Ore, Malachite, Iron Pyrites, and Limonite, in slate. *Loc.* Pioneer Chief M.L. (231), Cone Cr., ½-mile N. of Mt. Start, Pioneer Chief Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 123-125 (1908).

2094. —— ——. *Assoc.with* Redruthite, Malachite, Chrysocolla, Limonite, and Turgite, in slate and quartz. *Loc.* Highland Mary M.L. (531), Ready Rhino Group, Duck Cr., 23½ miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 91-93 (1908).

2095. —— ——. *Assoc.with* Native Copper, Redruthite, Tile Ore, Malachite, Chrysocolla, Iron Pyrites, and Limonite, in schist, slate, quartzite, and quartz. *Loc.* Banjo Copper M.L. (590), Tambourine Group, Duck Cr., 26 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 167, 168 (1908).

2096. —— ——. *Assoc.with* Redruthite, Azurite, Malachite, Chrysocolla, Iron Pyrites, Limonite, and Tourmaline, in schist, slate, and quartz. *Loc.* Tambourine Copper R.C. (286), Tambourine Group, Duck Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 166, 167 (1908).

2097. —— ——. *Assoc.with* Redruthite, Malachite, Chrysocolla, Limonite, and Turgite, in schist and quartz. *Loc.* Brilliant M.L. (588), Tharsis Group, 1½ mile N.W. of Mt. Start, 20 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 114, 115 (1908).

2098. —— ——. *Assoc.with* Tile Ore, Malachite, Limonite, and Göthite, in schist. *Loc.* Brilliant M.C. (159), Timberoo Group, Slaty Cr., 18 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 178-181 (1908).

2099. —— ——. *Assoc.with* Limonite, Calcite, and Ferro-Calcite, in clay schist. *Loc.* Ida Copper M.C. (179), Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 178, 179 (1908).

2099A.—— ——. *Assoc.with* Cuprite, Malachite, and Limonite, in chloritic schist. *Loc.* Mt. Minde M.F. (2658), Friedman's Cr., br. of Slaty Cr., Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 170-172 (1908).

2100. —— ——. *Assoc.with* Redruthite and Limonite, in chloritic schist. *Loc.* Resurgam M.L. (399), Slaty Cr., Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 175-177 (1908).

2101. —— ——. *Assoc.with* Redruthite, Bornite, Tile Ore, Malachite, Iron Pyrites, Hematite, Limonite, Muscovite, and Calcite, in schist, slate, and quartz. *Loc.* Timberoo M.L. (716), Friedman's Cr., br. of Slaty Cr., Timberoo Group (*ante*). *Ref.* G.S Q. Pub. 215, pp. 172-175 (1908).

2102. —— ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, and Galena, in granite. *Loc.* Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn., Normanton-Croydon line. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 202, p. 10 (1905).

2103. —— ——. *Assoc.with* Native Copper, Cuprite, Malachite, Chrysocolla, and Limonite, in gossany quartz and calcareous sinter. *Loc.* Boundary M.L. (582), Bull Cr. Group, Coolullah Run, 74 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 345-347 (1908).

2104. —— ——. *Assoc.with* Bornite, Malachite, and Limonite, in limestone. *Loc.* Centipede M.L. (375), Centipede Group, 53 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 301, 302 (1908).

2105. —— ——. *Assoc.with* Redruthite, Malachite, and Limonite, in quartz. *Loc.* Bauhinia M.C. (347), Dobbyn Group, 3½ miles W.N.W. of Crusader Freeholds, Coolullah Run, 70½ miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 341, 342 (1908).

2106. —— ——. *Assoc.with* Redruthite, Malachite, and Limonite, in schist. *Loc.* Dobbyn 1 S. M.L. (662), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 341 (1908).

2107. —— ——. *Assoc.with* Redruthite, Malachite, Limonite, Calcite, and Ferro-Calcite, in quartz. *Loc.* Glenferrie P.A. (300), nr. Old Man Cr., Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 344 (1908).

2108. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, Azurite, Chrysocolla, and Limonite, in schist, slate, and gossan. *Loc.* Mighty Atom M.L. (274), Mighty Atom Group, Six-mile Cr., Leichhardt R., 42 miles N.W.byW. of Cloncurry. *Co.* Tewinga. *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 304-306 (1908).

2109. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, and Limonite, in gossan and quartz. *Loc.* Mt. Bornite, M.L. (376), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 309, 310 (1908).

2110. —— ——. *Assoc.with* Redruthite, Cuprite, Tile Ore, Malachite, and Limonite, in slate, schist, and gossan. *Loc.* Mt. Millicent, M.L. (663), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 307, 308 (1908).

2111. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, and Limonite, in slate and kaolin. *Loc.* Mt. Millicent S. M.L. (664), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 308-310 (1908).

2112. —— ——. *Assoc.with* Native Copper, Cuprite, Tile Ore, Malachite, and Limonite, in schist, slate, and gossan. *Loc.* Mt. Cuthbert M.L. (107), Mt. Cuthbert Group, Six-mile Cr., Leichhardt R., 19 miles S.W. of Coolullah H.S., 63 miles N.W. of Cloncurry. *Co.* Tewinga. *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 315-318 (1908).

2113. —— ——. *Assoc.with* Redruthite, Cuprite, Tile Ore, Malachite, Chrysocolla, and Limonite, in schist, gossan, and quartz. *Loc.* Mt. Cuthbert 1 N. M.L. (381), Mt. Cuthbert Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 318-321 (1908).

2114. —— ——. *Assoc.with* Malachite, Chrysocolla, Iron Pyrites, Limonite, Ironstone, and Magnetite, in kaolinised schist. *Loc.* Mt. Cuthbert 1 and 2 S. M. Leases (257 and 294), Mt. Cuthbert Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 321, 322 (1908).

2115. —— ——. *Assoc.with* Native Copper, Redruthite, Cuprite, Tile Ore, Tenorite, Malachite, Iron Pyrites, and Limonite, in slate and gossan. *Loc.* Mt. Metallic R.C. (310), Mt. Metallic Group, Prospector Cr., trib. of Leichhardt R., 52 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Assay:* Copper = 39·8 per cent.; Silver = 1 oz. 16 dwt. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 215, pp. 295-297 (1908).

2116. Copper Pyrites. *Assoc.with* Redruthite, Malachite, Calcite, and Jasper, in slate, gossan, and quartz. *Loc.* Queenslander M.L. (436), Mt. Metallic Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 297-299 (1908).

2117. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, and Limonite, in schist, gossan, and quartz. *Loc.* Chance P.A. (283), St. Paul's Cr. Group, Leichhardt R., Coolullah, 78 miles N.N.W. of Cloncurry. *Co.* Tewinga. *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 352-354 (1908).

2118. —— ——. *Assoc.with* Redruthite and Limonite, in kaolin. *Loc.* Queen Bee M.C. (278), St. Paul's Cr. Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 354 (1908).

2119. —— ——. *Assoc.with* Redruthite, Limonite, and Calcite, in schist and quartz. *Loc.* Hare's Excelsior M.L., Von Bremen's Group, St. Paul's Cr., Leichhardt R., 70 miles N.W.byN. of Cloncurry. *Co.* Tewinga. *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 327, 328 (1908).

2120. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, and Limonite, in schist, gossan, and quartz. *Loc.* Isabella M.C. (360), Von. Bremen's Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 325, 326 (1908).

For further Cloncurry references, *see* Nos. 2199 to 2209.

2121. —— ——. *Assoc.with* Gold. *Loc.* Boolboonda Copper Lode, Boolboonda, 12 miles N.E. of Mt. Perry Rail. Stn. (Mt. Perry line). *Co.* Bowen. *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 21, p. 13 (1886), and G.S.M.

2122. —— ——. *Assoc.with* Gold. *Loc.* New Moonta Mine, Boolboonda (*ante*). *Ref.* G.S.M.

2123. —— ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel. *Loc.* Mt. Ophir Mine, Mt. Ophir, Chowey Cr. Goldfield, 62 miles (by rail) W. of Maryborough (Gayndah br. line). *Co.* Bowen. *Dist.* Burnett. *Ref.* A.R., p. 158 (1908).

2123A. —— ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel, in felsite. *Loc.* Achillea Mine, Gebangle, 3 miles up Yarrabil Cr., 11 miles N.W. of Degilbo Rail. Stn. (Gayndah br. line). *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 60, p. 5 (1890), and G.S.M.

2123B. —— ——. *Assoc.with* Gold and Iron Pyrites, in lode. *Loc.* Canterbury Copper Mine, nr. Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg (Bundaberg-Mt. Perry line). *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

2124. —— ——. *Assoc.with* Cinnabar, in lode in granite. *Loc.* Between Elizabeth and St. George's Shaft at Mt. Perry (*ante*). *Ref.* B.D.

2125. —— ——, in quartz and calcite. Fortunatus Copper Mine, Mt. Perry (*ante*). *Contents:* Copper = 30 per cent. *Ref.* G.S.Q. Pub. 21, p. 18 (1885).

2126. —— ——. *Assoc.with* Bornite and Tenorite, in quartz lode. *Loc.* Mt. Perry Copper Mines, Mt. Perry (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 57 (1887).

2127. —— ——. *Assoc.with* Gold, Cuprite, Chalcotrichite, Tile Ore, Iron Pyrites, Zinc-Blende, and Calcite, in lode. *Loc.* Mt. Perry Mine, Mt. Perry (*ante*). *Ref.* G.S.M.

2128. —— ——. *Assoc.with* Tenorite and Iron Pyrites. *Loc.* Normanby Copper Mine, Mt. Perry (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and G.S.M.

2129 —— ——. *Assoc.with* Iron Pyrites, Galena, Zinc-Blende, and Barytes, in quartz. *Loc.* Potosi Copper Lode, 3 miles E. of Mungai, 6 miles W. of Mt. Perry, 78 miles (by rail and road) S.W.byW. of Bundaberg (Mt. Perry line). *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and G.S.M.

2130. —— ——. *Assoc.with* Gold, Silver, and Molybdenite, in quartz veins in granite country. *Loc.* Globe Copper Mine, Wolca, 6 miles N. of Mt. Perry, 73 miles (by rail and road) S.W.byW. of Bundaberg (Mt. Perry line). *Co.* Bowen (*ante*). *Analysis:* Gold = 1 oz. 13 dwt. per ton; Silver = 3 oz. 2 dwt. per ton; Copper = 21·1 per cent. *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

2130A. —— ——. *Assoc.with* Iron Pyrites. *Loc.* Wolca Copper Lodes, 6 miles N.N.W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

2131. —— ——. *Assoc.with* Oxidised Copper Ores. *Loc.* Wonbah Hill, 12 miles (by rail) N.byW. of Mt. Perry Rail. line (Bundaberg—Mt. Perry line). *Co.* Bowen (*ante*). *Ref.* G.S.M.

2131A. —— ——. *Assoc.with* Gold, Malachite, and Limonite, in lode. *Loc.* nr. Wonbah Hill Mine, 2 miles N.byW. Wonbah Siding, 60 miles (by rail and road) S.W.byW., of Bundaberg. *Co.* Bowen (*ante*). *Ref.* A.R., p. 264 (1910).

2132. —— ——. *Assoc.with* Mispickel, Bismutite, and Calcite, in lode. *Loc.* 1 mile N.N.E. of Mt. Biggenden Bismuth Mine, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. 3 (1890).

2133. —— ——. *Assoc.with* Gold, Silver, Iron Pyrites, Cuprite, Tenorite, Malachite, Pyrrhotite, Mispickel, Zinc-Blende, Bismuthinite, Hematite, and Calcite, in quartz lode. *Loc.* Commonwealth Mine, Mt. Havilah, 2¾ miles W. of Degilbo Rail Stn. (Gayndah br. line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 185, p. 6 (1903), and 207, pp. 14 (1907).

2134. —— ——. *Assoc.with* Gold, Silver, Iron Pyrites, Native Bismuth, Bismuthinite, Mispickel, Magnetite, and Ironstone, in lode. *Loc.* Don Jon (Unique) Bismuth Mine, ¼-mile S. of Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 173, p. 4 (1902), and 207, pp. 13, 14 (1907).

2135. —— ——. *Assoc.with* Malachite and Azurite, in ironstone. *Loc.* Don Jon (Unique) Bismuth Mine, ¼-mile S. of Mt. Havilah (*ante*). *Ref.* A.R., 1906, p. 44, and B.D.

2136. —— ——. *Assoc.with* Gold, Telluride of Gold, Malachite, Native Bismuth, Bismuthinite, Joseite, Molybdenite, Mispickel, Zinc-Blende, and Calcite. *Loc.* Mt. Shamrock Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah Br. line), 63 miles (by rail or road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 60, p. 6 (1890), 125 (1897), and 168 (1901), and B.D.

2137. —— ——. *Assoc.with* Malachite, Azurite, Iron Pyrites, and Galena, in quartz. *Loc.* Black Watch Reef, Gympie Copper Mines (Scrub Paddock Diggings), Gooroomjam Cr., 23 miles N.N.E. of Nanango, 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Yield:* Gold = 1 oz. 9 dwt. per ton; Silver = 1 oz. 16 dwt. per ton. *Assays:* (1) Gold = 4 oz. 3 dwt. per ton; Silver = 7 oz. 17 dwt. per ton. (2) Gold = 4 oz. 3 dwt. per ton; Silver = 7 oz. 17 dwt. per ton. *Ref.* G.S.Q. Pub. 29, p. 3 (1886).

2138. —— ——. *Assoc.with* Iron Pyrites and Magnetite, in diorite. *Loc.* M.L. (25), Gympie Copper Mines or Scrub Paddock Diggings (*ante*). *Ref.* G.S.Q. Pub. 169, pp. 7-9 (1901).

2139. —— ——. *Assoc.with* Tenorite, Iron Pyrites, Mispickel, and Galena. *Loc.* P.A. (2), Gympie Copper Mines (*ante*). *Assays:* (1) Gold = 11 dwt. 16 gr.; Silver = 6 oz.; Copper = 9 per cent. (2) Gold = 2 dwt. 6 gr. per ton; Silver = 11 dwt. 16 gr. per ton; Copper = 0·6 per cent. *Ref.* G.S.Q. Pub. 169, p. 9 (1901).

2139A. —— ——. *Assoc.with* Gold, Iron Pyrites, Galena, Zinc-Blende, and Calcite, in ironstone lode. *Loc.* Ban Ban Station, 12 miles S.E.byE. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* Burnett. *Ref.* A.R., p. 179 (1909).

2140. —— ——. *Assoc.with* Malachite, Azurite, and Iron Pyrites, in chlorite lode. *Loc.* Robina (or Mt. Hawick) Copper Mine, 12 miles W.S.W. of Degilbo Rail. Stn. (Gayndah line. *Co.* Mackenzie (*ante*). *Assay:* Gold = trace; Silver = 2 oz. 1 dwt. 3 gr. per ton; Copper = 1·38 per cent. *Ref.* G.S.Q. Pub. 150, p. 4 (1900).

2141. —— ——. *Assoc.with* Iron Pyrites and Magnetite. *Loc.* Nr. Cannindah Stn., head of Cabbage Tree Cr., br. of Splinter Cr., 22 miles S.E.byS. of Many Peaks Rail. Stn. (Boyne Valley line), 80 miles (by rail and road) S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. *Ref.* A.R., 1907, p. 99.

2141A. —— ——. *Assoc.with* Malachite, Azurite, Limonite, in quartz. *Loc.* Malpas' Claim, Pinnacle Cr., br. of Lynd R., 16 miles W. of Fossilbrook, **Walsh and Tinaroo Mineral Fields.** *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* A.R., p. 223 (1910).

2141B. —— ——. *Assoc.with* Cuprite, Malachite, and Azurite, in lode. *Loc.* Daintree Copper Mine, 38 miles S.E. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Copperfield; *Dist.* Cook. *Ref.* E.O.M. and G.S.Q. Pub. 234, p. 28 (1911).

2142. —— —— *Assoc.with* Gold, Iron Pyrites, Galena, in quartz. *Loc.* Victory Reef, McLeodsville, 6 miles N.N.W. of Thornborough, 25 miles N. of Dimbulah Rail. Stn. (Chillagoe line), Hodgkinson Goldfield. *Co.* Dagmar; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 27 (1884).

2143. —— ——. *Assoc.with* Iron Pyrites. *Loc.* Mt. Molloy, 17 miles S.S.W. of Port Douglas, 20 miles (by rail) N.N.W. of Biboohra Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Dagmar (*ante*). *Assays:* (1) Gold = 3 dwt. 4 gr., Silver = 6 oz. 18 dwt. per ton, Copper = 16·6 per cent.; (2) Gold = trace, Silver = 8 oz. per ton, Copper = 14 per cent.; (3) Gold = trace, Silver = 3 oz. per ton, Copper = 32·8 per cent. *Ref.* A.R., p. 115 (1907).

2144. —— ——. *Assoc.with* Gold, Silver, Chalcanthite, and Copper carbonate. *Loc.* Elektron Silver Mine, Caledonia Cr., Goldsmith Cr., 24 miles S.S.E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

2145. Copper Pyrites. *Assoc.with* Gold, Iron Pyrites, Galena, and Mispickel, in quartz and calcite. *Loc.* Balmoral Reef, 1½ mile W. of Castleton, 20 miles S.byE. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), and 151, p. 12 (1900).

2146. —— ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Sir Henry Havelock Reef, 2½ miles N.W. of Castleton, 5 miles S.S.E. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 151, p. 12 (1900).

2146A. —— ——. *Assoc.with* Silver, Cerussite, Galena, and Limonite, in lode. *Loc.* Mt. Dee Vale Mine, Charleston, 144 miles (by rail) S.W. of Almaden Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* O.R. (1909).

2147. —— ——. *Assoc.with* Gold, Redruthite, Iron Pyrites, Mispickel, Galena, and Zinc-Blende, in quartz-lode. *Loc.* Nil Desperandum Mine, Charleston (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), and 219, p. 14 (1909).

2148. —— ——. *Assoc.with* Iron Pyrites and Pyrrhotite, in quartz. *Loc.* Havelock Mine, 5 miles S. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 219, p. 12 (1909).

2149. —— ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, Galena, and Zinc-Blende, in quartz. *Loc.* Papa Reef, Georgetown, 20 miles N. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 3 (1887).

2150. —— ——. *Assoc.with* Gold and Iron Pyrites, in ferruginous quartz. *Loc.* St. George Mine, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 6 (1900).

2151. —— ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc-Blende, in quartz. *Loc.* International Reef, Rocky, Sandy Cr., 7 miles S.W.byS. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 151, p. 10 (1900), and 219, p. 9 (1909).

2151A. —— ——. *Assoc.with* Malachite, Pyrrhotite, etc. *Loc.* Einasleigh Copper Mine, 4 miles E.N.E. of Charleston Rail. Stn., 102 miles (by rail) S.S.W. of Almaden Rail. Stn. (Etheridge line). *Co.* Gilbert (*ante*). *Ref.* G.S.M. and G.S.Q. Pubs. 219, p. 19 (1909), and 234, pp. 21-26 (1911).

2151B. —— ——. *Assoc.with* Magnetite, in quartzite. *Loc.* Teesdale, about 10 miles (by rail) S.W. of Einasleigh. *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 234, pp. 26, 27 (1911).

2151C. —— ——. *Assoc.with* Iron Pyrites and Galena, in granite. *Loc.* Stockman's Cr., 6 miles N.W. of Teesdale Rail. Stn., Etheridge Goldfield. *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 234, p. 27 (1911).

2152. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Monarch Reef, Northcote, 12 miles W. of Mareeba Rail. Stn. (Cairns line), Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 28 (1884).

2153. —— ——. *Assoc.with* Cassiterite, Mispickel, and Zinc Blende, in quartz lode. *Loc.* Consolidated Mine, Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson (*ante*). *Ref.* G.S.M.

2154. —— ——. *Assoc.with* Galena and Anglesite, in pipe veins. *Loc.* Montalbion Silver Mine, Montalbion (*ante*). *Ref.* G.S.Q. Pub. 119, p. 29 (1897).

2155. —— ——. *Assoc.with* Silver, Iron Pyrites, Mispickel, Galena, and Zinc-Blende. *Loc.* Tornado Claim, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Analysis*: *See* No. 2780. *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

2156. —— ——. *Assoc.with* Chalcanthite and Marcasite. *Loc.* Chance Mine, Watsonville, head of James Cr., trib. of Walsh R., 7 miles E.S.E. of Stannary Hills, 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

2157. —— ——. *Assoc.with* Malachite, Azurite, Copper oxide, and Cassiterite. *Loc.* Crucible Tin Mine, Watsonville (*ante*). *Yield:* Tin Oxide = 58 per cent. *Ref.* G.S.M., G.S.Q. Pub. 13, pp. 21, 22 (1883).

2158. —— ——. *Assoc.with* Cassiterite, Mispickel, and Orthoclase, in elvan dyke. *Loc.* Gt. Western Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 27 (1883).

2159. —— ——. *Assoc.with* Stannite (?). *Loc.* Herbertina Mine, Watsonville (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

2160. —— ——. *Assoc.with* Mispickel, in diorite. *Loc.* King-of-the-North Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 25 (1883).

2160A. —— ——. *Assoc.with* Cassiterite, Mispickel, Galena, Wolfram, Garnet, and Chlorite, in greywacke. *Loc.* King-of-the-Ranges Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 222, pp. 41-50 (1910).

2161. —— ——. *Assoc.with* Cuprite, Malachite, Azurite, Iron Pyrites, Mispickel, Cassiterite and Stannite, Wolfram, Ironstone, Fluorspar, and Chlorite, in diorite. *Loc.* Stewart's T Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 26 (1883), and 119, p. 15 (1897).

2162. —— ——. *Assoc.with* Chalcanthite. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

2163. —— ——. *Assoc.with* Marcasite. *Loc.* St. Patrick's Day Mine, Watsonville (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

2164. —— ——. *Assoc.with* Copper carbonate, Chalcanthite, Iron Pyrites, Mispickel, Marcasite, Cassiterite, Wolfram, Limonite, Red and Yellow Ochre. *Loc.* Try Again and Chance Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883), and P.R.S.Q., vol. 4, p. 52 (1887).

2165. —— ——. *Assoc.with* Tile Ore, Malachite, Azurite, and Chalcanthite. *Loc.* Wyatt's Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

2166. —— ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Bamford, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay:* Gold = 19 gr., Silver = 18 oz. per ton, Copper = 5·3, Lead = 4·6 per cent. *Ref.* A.R., p. 46 (1906).

2167. —— ——. *Assoc.with* Iron Pyrites, Galena, Zinc-Blende, and Molybdenite. Bamford (*ante*). *Assay:* Gold = 19 gr., Silver = 37 oz. per ton, Copper = 3·4 per cent. *Ref.* A.R., p. 101 (1907).

2168. —— ——. *Assoc.with* Galena, Mispickel, and Zinc-Blende, in quartz. *Loc.* Boomerang Mine, 1 mile W. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

2168A. —— ——. *Assoc.with* Galena. *Loc.* Fortunatus Mine, Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 50 (1897).

2169. —— ——. *Assoc.with* Bornite, Cuprite, Tile Ore, Tetrahedrite, Tenorite, Malachite, Iron Pyrites, Hematite, and Atacamite, in lode in felspar and quartz. *Loc.* Ruddygore Mine, 2 miles N.E. of Chillagoe, 141 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 10, 11 (1898).

2170. —— ——. *Assoc.with* Cassiterite, Iron Pyrites, Mispickel, and Galena. *Loc.* Iolanthe Tin Mine, Koorboora, 108 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 11 (1891).

2171. —— ——. *Assoc.with* Cassiterite, Iron Pyrites, Mispickel, Galena, and Mica, in lode. *Loc.* Shakespeare Tin Lease, Koorboora (*ante*). *Ref.* G.S.Q. Pub. 69, p. 11 (1891).

2172. —— ——. *Loc.* Mt. Cardwell Mine, 5 miles S. of Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 51 (1900).

2173. —— ——. *Assoc.with* Azurite and Malachite. *Loc.* Mungana Mines, 149 miles (by rail) W.S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

2174. —— ——. *Assoc.with* Redruthite, Cuprite, Malachite, Azurite, Chrysocolla, Garnet Rock, and Fluorspar. *Loc.* Dorothy Mine, 1¼ mile S.E. of Mungana, 150 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69 (1891).

2175. —— ——. *Assoc.with* Malachite, Azurite, and Cerussite, in ferruginous lode. *Loc.* Queenslander Copper Mine, 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), 152 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, p. 11 (1898).

2176. —— ——. *Assoc.with* Cuprite, Malachite, Azurite, Galena, Minium, Cerussite, Hematite, Zinc-Blende, and Garnet, in felspathic lode and gossan. *Loc.* Penzance Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 6 (1891), 134, p. 11 (1898).

—— ——. *See further* Walsh and Tinaroo references *under* District Kennedy North, Nos. 2209A to 2215A.

2177. —— ——. *Assoc.with* Cinnabar, Bornite, Redruthite, Malachite, Azurite, Hematite, Limonite, and Jasper, in quartz and calcite. *Loc.* St. George Copper and Coal Mines, Little R., 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mosman; *Dist.* Cook. *Ref.* G.S.Q. Pub. 222, pp. 21-32 (1910).

2178. —— ——. *Assoc.with* Gold, Silver, and Iron Pyrites, in quartz reef. *Loc.* Wise's Shaft, Wise's Knob, Oaks Goldfield, 45 miles E.S.E. of Charleston Rail. Stn. (Etheridge line). *Co.* Percy; *Dist.* Cook. *Ref.* A.R., p. 164 (1908).

2179. Copper Pyrites. *Assoc.with* Gold, Iron Pyrites, Galena, Zinc-Blende, in quartz. *Loc.* Eclipse Mine, Horn Is. Goldfield, 3 miles S.E. of Thursday Is., Torres Strait. *Co.* Torres; *Dist.* Cook. *Ref.* G.S.Q. Pub. 112, p. 6 (1896), and G.S.M.

2180. —— ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc-Blende. *Loc.* Pioneer Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

2181. —— ——. *Assoc.with* Mispickel, Galena, and Zinc-Blende, in chlorite and quartz. *Loc.* Doctor's Lode, Sel. 39, Jibbinbar, 20½ miles S.byW. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* (and *Assay*)*:* G.S.Q. Pub. 67, p. 2 (1890).

2182. —— ——. *Assoc.with* Gold, Silver, and Mispickel, in quartz. *Loc.* Fletcher's Sel. (29), Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

2183. —— ——. *Assoc.with* Malachite and Mispickel, in lode. *Loc.* M.A. 26, Jibbinbar (*ante*). *Assay:* Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 87, p. 11 (1892).

2184. —— ——. *Assoc.with* Cassiterite, Molybdenite, and Wolfram, in quartz vein in greisen. *Loc.* Kettle Swamp, trib. of Quart Pot Cr., close to Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 125, p. 29 (1897), and G.S.M.

2185. —— ——. *Assoc.with* Garnet and Calcite. *Loc.* Malone's Mine, S. of Pikedale Hotel, 11 miles W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* (?)

2186. —— ——. *Assoc.with* Redruthite, Copper carbonate, Galena, Zinc Blende, Manganese-dioxide, and Ironstone. *Loc.* Pikedale Silver Mine, Woolshed Gully, Pikedale Head Stn., 20 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 87 (1898).

2187. —— ——. *Assoc.with* Iron Pyrites, Mispickel, Azurite, Zinc-Blende, and Cassiterite, in quartz, greisen, and slate. *Loc.* Ballandean Tin Mine, Severn R., 14 miles (by rail) S. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M., B.D., and L.C.B.

2188. —— ——. *Assoc.with* Iron Pyrites, Mispickel, Galena, and Zinc-Blende, in lode. *Loc.* Silver Queen Silver Mine, Severn R., 6 miles W. of Ballandean Rail. Stn., 21 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay: See* No. 2834. *Ref.* G.S.Q. Pub. 191, p. 39 (1904).

2189. —— ——. *Assoc.with* Zinc-Blende, Cassiterite, and Galena, in chlorite, quartz, and fluorspar lodes. *Loc.* in bank of Severn River, 7 miles W. of Ballandean Rail. Stn., 21 miles (by rail and road) S.S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

2190. —— ——. *Assoc.with* Cassiterite, Wolfram, Mispickel, and Chrysocolla, in quartz lode. *Loc.* Red Rock Cr., Severn R., 11 miles W.S.W. of Ballandean Rail. Stn. (Main line), 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 49 (1898).

2191. —— ——. *Assoc.with* Iron Pyrites and Galena, in chlorite and quartz. *Loc.* Mrs. Allison's Mine, Sugarloaf, 7 miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* (and *Assays*)*:* G.S.Q. Pub. 120, p. 87 (1898).

2192. —— ——. *Assoc.with* Mispickel, Cassiterite, Wolfram, Zinc-Blende, Calcite, Chlorite, and Orthoclase, in quartz. *Loc.* Sundown Copper Mine, Sundown Cr., Severn R., 12 miles S.W.byW. of Ballandean Rail. Stn., 26 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay:* Gold = 16 gr. per ton; Silver = 16 oz. per ton; Copper = 11·8 per cent. *Ref.* G.S.Q. Pub. 191, p. 22 (1904), and G.S.M.

2193. —— ——. *Assoc.with* Cuprite, Azurite, Malachite, and Zinc-Blende, in quartz. *Loc.* Sel. 24, nr. Sundown Cr., Severn (*ante*). *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

2194. —— ——. *Assoc.with* Galena. *Loc.* Silver Crown Silver-Copper Mine, 4 miles E. of Silver Spur, Texas, 40 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 191, p. 37 (1904).

2195. —— ——. *Assoc.with* Gold, Iron Pyrites, Pyrargyrite, Galena, Cerussite, Cuprite, Tile Ore, Malachite, Azurite, Zinc-Blende, Smithsonite, Ironstone, and Calcite, in lode. Silver Spur Mine, 8 miles E. of Texas, and 43 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* G.S.Q. Pubs. 120 (1898), and 191 (1904).

2196. —— ——. *Assoc.with* Malachite. *Loc.* Texas Copper Mine, 2 miles N.W. of Silver Spur Mine, 10 miles S. of Texas, 45 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* G.S.Q. Pub. 120, p. 95 (1898).

2197. —— ——. *Assoc.with* Gold, Iron Pyrites, and Talc, in quartz. *Loc.* Von Molke Mine, Leyburn Goldfield, 28 miles W.byN. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Assays:* (1) Gold = 16 dwt. 9 gr. per ton; Silver = 6 dwt. per ton. (2) Gold = 5 oz. 8 dwt. per ton; Silver = 1 oz. 5 dwt. per ton. *Ref.* G.S.Q. Pubs. 120, p. 71 (1898), and 87, p. 8 (1892).

2197A.—— ——. *Assoc.with* Silver, Galena, and Zinc-Blende, in lode. *Loc.* Claim on Lucky Valley Goldfield, 12 miles S.S.E. of Warwick. *Co.* Merivale (*ante*). *Ref.* A.R., p. 223 (1910).

2198. —— ——. *Assoc.with* Iron Pyrites, Galena, and Ferro-Calcite. *Loc.* Louisa Mine, Talgai Goldfield, 3 miles W. of Pratten, 21 miles W.N.W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pubs. 120, p. 55 (1898), 159, p. 1 (1900), and 156, pp. 17, 18 (1903).

2199. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite, Limonite, Calcite, and Epsomite, in quartz lode in schist and quartzite. *Loc.* Duchess Copper M.L. (275), Duchess Group, Jack's Cr., Burke R., 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 18-22 (1908).

2200. —— ——. *Assoc.with* Bornite, Tetrahedrite, and Malachite. *Loc.* Duches M.L. (275), Duchess Group ((*ante*). *Ref.* G.S.M.

2201. —— ——. *Assoc.with* Native Copper, Redruthite, Tile Ore, Malachite, an Limonite, in kaolinised rock, schist, and quartz. *Loc.* Italian Lease (689 Lady Fanny Group, 60 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 34, 35 (1908).

2202. —— ——. *Assoc.with* Tile Ore and Malachite, in slates, porphyry and gossan. *Loc.* Lady Fanny M.L. (178), Lady Fanny Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 30-33 (1908).

2203. —— ——. *Assoc.with* Iron Pyrites, Redruthite, Cuprite, Limonite, Malachite, and Chrysocolla, in lodes in hornblende schist. *Loc.* Mt. Birnie M.L. (686, etc.), Mt. Birnie Group, Burke R., 74½ miles S.S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, p. 367 (1908).

2204. —— ——. *Assoc.with* Malachite, Chrysocolla, Covelline, and Iron Pyrites, in quartz, quartzite, and schist. *Loc.* Ardath M.L. (656), Green's Cr., Will's R., Mt. Hope Group, 53 to 56 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 47, 48 (1908).

2205. —— ——. *Assoc.with* Native Copper, Redruthite, Cuprite, Tile Ore, Malachite, Atacamite, Limonite, and Calcite, in quartz and chloritic schist. *Loc.* Blue Jacket M.L. (632), Mt. Hope Group ((*ante*). *Ref.* G.S.Q. Pub. 215, pp. 43 44 (1908).

2206. —— ——. *Assoc.with* Redruthite, Malachite, and Limonite, in gossan, quartz and slate. *Loc.* Little Beauty M.L. (568), nr. Mt. Hope Group, Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 44-47 (1908).

2207. —— ——. *Assoc.with* Redruthite, Covelline (?), Tile Ore, Malachite, Iron Pyrites, Limonite, and Calcite, in chloritic schist. *Loc.* Monarch Senior M.C. (352), Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 42, 43 (1908).

2208. —— ——. *Assoc.with* Redruthite, Malachite, Chrysocolla, and Limonite, in quartz and kaolin. *Loc.* Trikelana M.L. (522), Trikelana Group, Pilgrim Cr., 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, p. 26 (1908).

2209. —— ——. *Assoc.with* Native Copper and Gypsum. *Loc.* Mt. Elliott R.C. (3, etc.), Mt. Elliott Group, Maggie's Cr., 58 miles S. of Cloncurry. *C* Merlin; *Dist.* Gregory North. *Ref.* G.S.M.

For other Cloncurry references, *see* Nos. 2060 to 2120 (minus Nos. 206 2068, 2102).

2209A.—— ——. *Assoc.with* Cassiterite and Fluorspar, in chloritic lode. *Loc.* Lotti Mine, Coolgarra, 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn. (Chillagoe br. line). *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* O.R. (1909).

2210. —— ——. *Assoc.with* Marcasite, Galena, and Zinc-Blende, in quartz lode. *Loc.* Try-no-More Silver Mine, Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2211. —— ——. *Assoc.with* Cassiterite, Mispickel, and Chalcanthite, in elvan dyke and quartz. *Loc.* Ironclad Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell (*ante*). *Ref.* G.S.Q. Pub. 13, p. 8 (1888).

2212. —— ——. *Assoc.with* Cassiterite, Penninite, and Talc. *Loc.* Wheal Vohr Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 16 (1883), and P.R.S.Q., vol. 15, p. 64 (1900).

2213. —— ——. *Assoc.with* Gold, Silver, Bornite, Azurite, Malachite, Chalcanthite, Mispickel, Zinc-Blende, Iron Pyrites, Hematite, Magnetite, Cerussite, and Minium, in quartz lodes in quartzite and porphyry. *Loc.* Mt. Garnet Mines, Return Cr., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

2214. Copper Pyrites. *Assoc.with* Iron Pyrites, Galena, Cerussite, and Zinc-Blende, in slate and volcanic tuffs. *Loc.* Lancelot Mines, Newellton (Silver Valley), 9 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* L.B. 1, p. 479 (1883).

2215. —— ——. *Assoc.with* Cassiterite and Zinc-Blende. *Loc.* Smith's Cr. Proprietary Tin Mines, Nynbool (Smith's Cr.), 28 miles (by rail) S.E.byS. of Lappa Junction (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 192, p. 29 (1904).

2215a. —— ——. *Assoc.with* Iron Pyrites and Rhodochrosite. *Loc.* In br. of Return Cr., between Mt. Garnet and Coolgarra, 6 miles N.byE. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

—— ——. *See further* Walsh and Tinaroo references *under* District Cook. Nos. 2141a-2176.

2216. —— ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz reef. *Loc.* Alexandra Hill G.M. Co.'s Mine, Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville (Gt. Northern line). *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

2217. —— ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc-Blende, in quartz and calcite. *Loc.* Carrington Lion 1 and 2 E. Lease, Lion Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2218. —— ——. *Assoc.with* Gold, Iron Pyrites, Galena, Zinc-Blende, and Barytes, in quartz and calcite. *Loc.* Carrington's United Mines, Ltd., Lease, Lion Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2219. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper carbonate, Galena, and Zinc Blende, in quartz. *Loc.* Comstock (Stockholm) Reef, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

2220. —— ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Livingstone Reef, 1 mile S.S.E. of Bluff Stn., nr Mt. Leyshon, 19 miles S.S.E. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

2221. —— ——. *Assoc.with* Gold, Iron Pyrites, and Copper carbonates, in quartz. *Loc.* Mt. Leyshon Mine, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* W.C.T.

2222. —— ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel, in quartz. *Loc.* Good Luck United, Lancashire Lass 1 W. Mine, Far Fanning, 39 miles N.W. of Ravenswood. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 133, p. 7 (1898).

2222a. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Wey Reef, Hillsborough (8-Mile), 3¾ miles N.N.E. of Ravenswood, Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

2223. —— ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende. *Loc.* New England No. 1 S. Mine, N. of Elphinstone Cr., Ravenswood Goldfield, 78 miles (by rail) S. of Townsville. *Co.* Gladstone (*ante*). *Assay:* Gold = 2·5 oz. to 5·65 oz. per ton. *Ref.* A.R.D.M., 1894, p. 34.

2224. —— ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende. *Loc.* New England Reef, N. of Elphinstone Cr., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 134 (1900).

2225. —— ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz. *Loc.* Shellmalier Reef, Elphinstone Cr., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 8 (1900), and G.S.M.

2226. —— ——. *Assoc.with* Gold and Zinc-Blende, in quartz. *Loc.* Wild Irish Girl Mine, New England Reef, Elphinstone Cr., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1900).

2227. —— ——. *Assoc.with* Silver, Iron Pyrites, Galena, Stibnite, and Zinc-Blende, in lode. *Loc.* King's Silver Lode, One Mine, Ravenswood Goldfield (*ante*). *Percentages:* Copper, 16·25; Antimony, 26·30; Silver, 15·35 (5,013 oz. per ton); Iron, 8·49; Zinc, 8·75; Sulphur, 17·02; Siliceous matter, 7·31. *Ref.* G.S.Q. Pub. 152, p. 11 (1900).

2228. —— ——. *Assoc.with* Chalcanthite. *Loc.* Black Jack Mine, Ravenswood Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

2229. —— ——. *Assoc.with* Gold, Tenorite, Malachite, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz. *Loc.* Buck Reef, ¾-mile S.E. of Ravenswood, Ravenswood Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

2229a. —— ——. *Assoc.with* Gold, in quartz. *Loc.* New Idea Reef, Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

2230. —— ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc-Blende, in quartz. *Loc.* Sunset and General Grant Reef, about ½-mile S. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 183, pp. 2-6 (1903).

2231. —— ——. *Assoc.with* Gold, Galena, and Zinc-Blende, in quartz. *Loc.* Sunset Reef, ½-mile S. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1900).

2232. —— ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc-Blende, in quartz. *Loc.* Cousin Jack Reef, Sandy Cr., 2¼ miles S.E.byE. of Ravenswood, Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

2233. —— ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc-Blende, in quartz and steatite. *Loc.* Politician Mine, Sandy Cr., Ravenswood Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 47 (1887).

2234. —— ——. In quartz. Villers Copper Syndicate's Mine, Sodawater Cr., Ravenswood Goldfield (*ante*). *Ref.* A.R., 1907, p. 115.

2235. —— ——. *Assoc.with* Chalcanthite. *Loc.* Bonnet Reef, Strathalbyn Goldfield, 30 miles E.byS. of Ravenswood. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

2236. —— ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Bell-Gay Reef, Mt. Remarkable, 6 miles W.byN. of Pentland Rail. Stn., Gt. Northern line, Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 5 (1891).

2237. —— ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Agnes Howson Reef, New Homestead Diggings, 46 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith (*ante*). *Ref.* G.S.Q. Pub. 73, p. 12 (1891).

2238. —— ——. *Assoc.with* Galena and Anglesite, in lode. *Loc.* Don (Dawn) R., 35 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Assay:* Silver, 9 oz. per ton; Lead, 78 per cent.; Copper and Bismuth, trace. *Ref.* A.R., p. 61 (1906).

2239. —— ——. *Assoc.with* Iron Pyrites and Hematite. *Loc.* Lamington Mine, head of Lah-di-dah Cr., Happy Valley, about 40 miles S. of Bowen. *Co.* Herbert (*ante*). *Ref.* B.D.

2239A. —— ——. *Assoc.with* Redruthite, Tile Ore, Malachite and Limonite. *Loc.* Mare's Nest Cr., Andromache R., 44 miles S.S.E. of Bowen. *Co.* Herbert (*ante*). *Ref.* A.R., p. 271 (1910).

2240. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper carbonate, and Yellow Ochre, in quartz. *Loc.* Seymour's Reef, Marengo Goldfield, 24 miles S.S.W. of Bowen. *Co.* Herbert (*ante*). *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

2240A. —— ——. *Assoc.with* Gold, Silver, Iron Pyrites, Malachite, and Azurite, in quartz reef. *Loc.* Venture Reef, Marengo Goldfield (*ante*). *Assay: See* No. 7490. *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

2240B. —— ——. *Assoc.with* Gold, Iron Pyrites, and Limonite, in quartz. *Loc.* Lady Augusta P.A. (129), Moss Vale Stn., nr. Euri Cr., about 7 miles S.W. of Bowen. *Co.* Herbert (*ante*). *Ref.* A.R., p. 269 (1910).

2241. —— ——. *Assoc.with* Gold and Malachite, in quartz. *Loc.* Overland Reef, between Dreghorn and Burdekin R., 14 miles S. of Ravenswood. *Co.* Murray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

2242. —— ——. *Assoc.with* Gold, Azurite, Malachite, and Chalcanthite, in quartz reef, in granite. *Loc.* Continong Mine, Burdekin R., 70 miles W. of Townsville. *Co.* O'Connell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 35, p. 12 (1887), and G.S.M.

2242A. —— ——. *Assoc.with* Galena. *Loc.* Jack's Cr., 56 miles N.W. of Charters Towers. *Co.* O'Connell (*ante*). *Ref.* A.R., p. 96 (1907).

2243. —— ——. *Assoc.with* Malachite and Cerussite. *Loc.* Alice Shaft, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M.

2244. —— ——. *Assoc.with* Iron Pyrites and Zinc-Blende, in quartz leader. *Loc.* Comstock Lease (187), Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Gold = trace; Silver = 25 oz. per ton. (2) Gold = 4 dwt. 21 gr.; Silver = 41 oz. per ton; Copper = 3·5 per cent. (3) Gold = 1 dwt. 15 gr.; Silver = 31 oz. per ton; Copper = 14·4 per cent. *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

2245. —— ——. *Assoc.with* Cassiterite and Galena. *Loc.* Kangaroo Hills Tin Freeholds (166 and 198), N. of Oakey Cr., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 167, p. 5 (1901).

2246. —— ——. *Assoc.with* Native Copper, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Manganese-dioxide, Zinc Blende, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

2247. Copper Pyrites. *Assoc.with* Bornite, Tenorite, Cuprite, Copper carbonate, Galena, Zinc-Blende, Iron Pyrites, and Ironstone, in lode. *Loc.* Mt. Thekla Copper Mine, 4 miles N. of Ewan, Kangaroo Hills Mineral Field (*ante*). *Assays:* Sulphide Ore—Silver, 87 oz. per ton; Lead, 8·65; Copper, 21·37; Zinc, 4 to 5 per cent. Carbonate Ore—Silver = 23 oz. per ton; Copper = 15·75; Zinc = 4 per cent. *Ref.* G.S.Q. Pub. 167, p. 7 (1901).

2248. —— ——. *Assoc.with* Native Silver, Bornite, Cuprite, Copper carbonate, and Galena, in lode. *Loc.* True Blue Lease (161), Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver = 60 oz. per ton; Copper = 27·5 per cent. (2) Silver = 56 oz. per ton; Copper = 41·4 per cent. *Ref.* G.S.Q. Pub. 82, p. 8 (1893).

2249. —— ——. *Assoc.with* Bornite, Tile Ore, Galena, Cerussite, Hematite, and Mispickel, in lode. *Loc.* Wallaroo Lease (162), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 3 oz. 13 dwt. 12 gr. per ton; Copper = 1·7 per cent. *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

2250. —— ——. *Assoc.with* Malachite, Galena, Minium, Cerussite, Mispickel, Ironstone, Iron Ochre, and Manganese-dioxide. *Loc.* Colorado Silver Mine, Star R. (Argentine) Silver Field, 50 miles N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Assays:* (1) Lead = 16 per cent.; Silver = 16 oz. per ton. (2) Lead = 48 per cent.; Silver = 42 oz. per ton.

2251. —— ——. *Assoc.with* Malachite, Galena, and Zinc-Blende, in quartz. *Loc.* Mackay's Mine, Blue Mountains, 9 miles S.W. of Eton Rail. Stn. (Mackay line), 32 miles (by rail and road) S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 53, p. 10 (1889).

2252. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* 1 mile E. of Eungella Stn., Broken R., 30 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 39, p. 6 (1887).

2252A. —— ——. *Assoc.with* Gold, Iron Pyrites, Limonite, Turgite, Ironstone, and Galena, in quartz. *Loc.* Broken R. Gold and Silver Mine, Bee Cr. Diggings, Eungella Goldfield, 10 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), and 229, p. 30 (1910).

2252B. —— ——. *Assoc.with* Gold, Iron Pyrites, Limonite, Siderite, Malachite, Galena, and Zinc-Blende, in quartz. *Loc.* Highland Mary P.C., Bee Cr. Diggings, Eungella Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), and 229, p. 30 (1910).

2252C. —— ——. On eastern slope of Eungella Range, about 2 miles from Eungella R. Stn. Large lode is said to exist here. *Co.* Carlisle (*ante*).

2253. —— ——. *Assoc.with* Tile Ore and Malachite, in lode. *Loc.* Shaft near Orchid No. 1 N. Claim, Eungella Goldfield (*ante*). *Ref.* A.R., p. 155 (1908).

2253A. —— ——. *Assoc.with* Bornite, in quartz. *Loc.* Christie's Copper Lode, Por. 83v., Mia Mia, Cattle Cr., 5 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 229, p. 36 (1910).

2253B. —— ——. *Assoc.with* Malachite and Azurite, in quartz. *Loc.* Mountain Bull Lode, Por. 7v., Mia Mia, Cattle Cr. (*ante*). *Ref.* G.S.Q. Pub. 229, p. 36 (1910).

2254. —— ——. *Assoc.with* Malachite, Azurite, Galena, Cerussite, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz lode. *Loc.* Mt. Barker Silver-Lead Mine, 3 miles N.W. of Eungella Stn., 33 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pubs. 54, p. 3 (1889), and 181, pp. 12-17 (1903), and 229, pp. 34, 35 (1910).

2254A. —— ——. Said to be in large well-defined lode. *Loc.* Eastern slope of Eungella Range, 1½ miles above the foot of the Range, and about 3 miles from Eungella Rail. Stn. *Co.* Carlisle (*ante*).

2255. —— ——. *Assoc.with* Gold, Tetrahedrite, Tenorite, Malachite, Azurite, Galena, and Ironstone, in quartz lode. *Loc.* Pine Vale Copper Mine, Pine Vale Cr., Mt. Spencer Goldfield, 9 miles S.byE. of Eton Rail. Stn. (Mackay line), 32 miles W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), and 229, pp. 12-17 (1910).

2255A. —— ——. *Assoc.with* Galena and Zinc-Blende, in quartz. *Loc.* Ben Mohr M.L. (8), Mt. Spencer Goldfield (*ante*). *Ref.* G.S.Q. Pub. 229, p. 19 (1910).

2256. —— ——. *Assoc.with* Gold, Iron Pyrites, in quartz. *Loc.* Enterprise Reef, Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 5, p. 8 (1879).

2257. —— ——. *Assoc.with* Gold, Siderite, and Mispickel, in quartz vein. *Loc.* Faith (Just-in-Time) Reef, Normanby Goldfield (*ante*). *Assay:* Gold = 9 oz. 6 dwt. per ton. *Ref.* G.S.Q. Pub. 88, p. 5 (1893).

2258. —— ——. *Assoc.with* Gold, Marcasite, and Mispickel, in quartz. *Loc.* Frederick I. Reef, nr. Peter's Cr., Normanby Goldfield (*ante*). *Assay:* Gold = 2 oz. 11 dwt. 11 gr. per ton. *Ref.* G.S.Q. Pub. 88, p. 1 (1893).

2259. —— ——. *Assoc.with* Gold, Iron Pyrites, Tetrahedrite, Siderite, Mispickel, Ironstone, and Yellow Ochre, in quartz reef. *Loc.* Grace Darling Lease (11), Normanby Goldfield (*ante*). *Assay:* Gold = 16 oz. 6 dwt. 16 gr. per ton. *Ref.* G.S.Q. Pubs. 5, p. 6 (1879), and 88, p. 3 (1893).

2260. —— ——. *Assoc.with* Gold and Copper carbonate, in quartz. *Loc.* Marquis Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 3 (1879).

2261. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Star of Hope P.C., Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 4 (1879), and G.S.M.

2262. —— ——. *Assoc.with* Gold and Azurite, in white quartz. *Loc.* True Blue Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 88, p. 4 (1893).

2263. —— ——. *Assoc.with* Gold, Iron Pyrites, Marcasite, and Mispickel, in quartz and steatite. *Loc.* Victor Tunnel, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 88, p. 5 (1893), and G.S.M.

2264. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper carbonate, and Mispickel, in quartz lode. *Loc.* Welcome Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 5, p. 5 (1879), and 88, p. 2 (1893).

2264A. —— ——. *Assoc.with* Galena and Zinc-Blende, in quartz. *Loc.* nr. Coolan's P.A., Mt. Wyatt Goldfield, about 60 miles S.S.E. of Ravenswood. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.M.

2265. —— ——. *Assoc.with* Malachite and Azurite, in lode, 3 ft. wide, in granite country. *Loc.* Lady Mary Mine, Mt. Wyatt Goldfield, 60 miles S.S.E. of Ravenswood. *Co.* Sellheim (*ante*). *Assays:* (1) Gold = 2 dwt., Silver = 2 oz. 1 dwt. 1 gr. per ton; Copper = 12·5 per cent. (2) Gold = 14 gr., Silver = 1 oz. 16 dwt. per ton; Copper = 19·9 per cent. *Ref.* A.R., p. 74 (1906).

2266. —— ——. *Assoc.with* Gold, Cuprite, Malachite, Azurite, Bismuth (native), Bismuthinite, Bismutite, Bismite, Galena, Manganese-dioxide, Hematite, and Ironstone. *Loc.* Daisy Bismuth Mine, Eukalunda, Sellheim Silver Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 57, pp. 7 and 8 (1889), and G.S.M.

2267. —— ——. *Assoc.with* Bismuth ores, Hematite, and Manganese-dioxide, in lode. *Loc.* Eukalunda Bismuth Mine, Eukalunda, Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 57, p. 8 (1889).

2268. —— ——. *Assoc.with* Iron Pyrites, Galena, Minium, Cerussite, Zinc-Blende, and Clay, in lode. *Loc.* General Gordon Mine, Sellheim Mineral Field (*ante*). *Assays:* (1) Lead = 41·90 per cent.; Silver = 43 oz. per ton. (2) Lead = 54·96 per cent.; Silver = 45 oz. per ton. *Ref.* G.S.Q. Pub. 57, p. 6 (1889).

2268A. —— ——. *Assoc.with* Gold, Bornite, Chalcanthite, and Copperas, in diorite. *Loc.* Mt. Clifford Mine, nr. Retreat and Ruby Creeks, 9½ miles (by road) N.W. of Anakie Rail. Stn. (Central line). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 127, p. 2 (1898).

2269. —— ——. *Assoc.with* Iron Pyrites, in quartz reef in serpentine country. *Loc.* Peak Downs Copper Mine, Copperfield, 4 miles S.S.W. of Clermont, 229 miles (by rail and road) W.byN. of Rockhampton. *Co.* Clermont (*ante*). *Assay:* Copper = 6·88 per cent. *Ref.* G.S.Q. Pubs. 27, p. 7 (1886), and 150, pp. 2-4 (1900).

2269A. —— ——. *Assoc.with* Tenorite and Iron Pyrites, in granite. *Loc.* Flora Copper Lode (in MacFadzen's M.F., 1749), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, p. 34 (1910).

2269B. —— ——. *Assoc.with* Iron Pyrites, Malachite, Azurite, and Ironstone, in slate. *Loc.* Isen's M.F. (2642), Mt. Flora Gold and Mineral Field (*ante*). *Assay:* Copper = 11·1 per cent.; Gold = 1 dwt. 5 gr., and Silver = 5 dwt. 5 gr. per ton. *Ref.* G.S.Q. Pub. 228, pp. 27-29 (1910).

2269C. —— ——. *Assoc.with* Iron Pyrites, Malachite, Azurite, and Hematite, in granite. *Loc.* Iron Duke M.C. (42), and Painted Peak M.F. (1807), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 27, 39 (1910).

2269D. —— ——. *Assoc.with* Iron Pyrites, Azurite, and Malachite in gossan, in slate. *Loc.* Keeley M.F. (2382), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 29, 30 (1910).

2269E. —— ——. *Assoc.with* Iron Pyrites, Malachite, Azurite, and Hematite, in gossan in slate. *Loc.* Laird of the Hills M.L. (32), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 30, 31 (1910).

2269F. —— ——. *Assoc.with* Tile Ore, Malachite, Azurite, Iron Pyrites, Chlorite, and Calcite, in slate and granite. *Loc.* MacFadzen's M.F. (1749), includes Donchang, Flora, Essie, Dozzler, Green Outcrops, etc., lodes; Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 31-35 (1910).

2269G. Copper Pyrites. *Assoc.with* Malachite, Azurite, Iron Pyrites, Pyrrhotite, Hematite, Limonite, and Magnetite, in granite and slate. *Loc.* Rodger's Back Sel. M.F. (1430), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 41, 42 (1910).

2269H. —— ——. *Assoc.with* Malachite, Azurite, Hematite, in quartz. *Loc.* Ballyhooley Claim, 5 miles from Mt. Flora Freehold, Mt. Flora Gold and Mineral Field (*ante*). *Assay:* Copper = 31·4 per cent.; Silver = 1 oz. 9 dwt. 9 gr. per ton. *Ref.* A.R., p. 243 (1910).

2270. —— ——. *Assoc.with* Gold, Chalcanthite, Orthoclase, and Calcite, in quartz. *Loc.* Red Streak Reef, Yatton Goldfield, 21 miles S.W.byS. of Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 7 (1887).

2271. —— ——. *Assoc.with* Gold, Silver, Mispickel, Bismuthite, and Hematite. *Loc.* Mine Cr. Gold Workings, Black Waterhole Cr., Mt. Spencer Goldfield, 2 miles N.byE. of Hazledean, 37 miles (by rail and road) S. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 164, pp. 10-12 (1901).

2271A. —— ——. *Assoc.with* Silver, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Tally Ho Claim, Mt. Spencer Run, about 10 miles S. of Eton Rail. Stn. Mackay line). *Co.* Wodehouse (*ante*). *Ref.* A.R., p. 284 (1910), and p. 317 (1911).

2272. —— ——. *Assoc.with* Tenorite, Azurite, Malachite, and Hematite. *Loc.* Mt. Orange Copper Mine, nr. Annandale Stn., 75 miles S.W. of Mackay. *Co.* Wodehouse (*ante*). *Ref.* P.R.S.Q., vol. 4, pp. 52, 77 (1887).

2272A. —— ——. *Assoc.with* Zinc-Blende, in chloritic slate. *Loc.* Ashington Copper Syn. Mine, Blackbutt, 25 miles S. of Nanango, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.M.

2273. —— ——. *Assoc.with* Bornite, in quartzite. *Loc.* Crow's Nest (Ravensbourne), 34 miles (by rail) N. of Toowoomba. *Co.* Cavendish (*ante*).

2274. —— ——. *Assoc.with* Tenorite, Iron Pyrites, Galena, and Zinc-Blende. *Loc.* Gt. Pyramid Mine (Saxon Shaft), Cressbrook Cr., 12 miles N. of Esk Rail. Stn., 79 miles (by rail and road) W.N.W. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 169, p. 6 (1901).

2275. —— ——. *Assoc.with* Copper carbonate, in lode. *Loc.* North Star Copper Mine, Cressbrook Cr. (*ante*). *Ref.* G.S.Q. Pub. 169, p. 6 (1901).

2276. —— ——. *Assoc.with* Iron Pyrites, Zinc-Blende, and Galena. *Loc.* Rising Star Copper Area, Cressbrook Cr. (*ante*). *Assay*: Copper, 3·75 per cent.; Silver, 1 oz. 13 dwt. 23 gr. per ton; Gold, trace. *Ref.* G.S.Q. Pub. 169, p. 4 (1901).

2277. —— ——. *Assoc.with* Gold, Iron Pyrites, Massicot, Anglesite, Galena, Mispickel, and Limonite, in gossan and slate. *Loc.* Silver Knob P.A., Mt. Langan, Emu Cr., 14½ miles W.N.W. of Kannangur Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish.; *Dist.* Moreton. *Assay*: *See* No. 3033. *Ref.* Q.G.M.J., vol. 7, p. 467 (1906).

2278. —— ——. *Assoc.with* Galena, in altered tuffs. *Loc.* Moller and Bennett's Copper Workings, Por. 52v, Par. of Murphy, 4½ miles N. of Murphy's Cr. Rail. Stn., 62 miles (by rail and road) W.byN. of Ipswich. *Co.* Cavendish (*ante*). *Ref.* A.R., p. 258 (1910).

2278A. —— ——. *Assoc.with* Galena and Zinc-Blende, in slate and quartzite. *Loc.* Deep Rocky Gorge, between Murphy's Cr. and Perseverance, 4½ miles N.byE. of Murphy's Cr. Rail. Stn. (Main line). *Co.* Cavendish (*ante*). *Ref.* O.R. (1910).

2279. —— ——. *Assoc.with* Gold, Mispickel, and Garnet, in quartz and chlorite. *Loc.* P.A., head of Ithaca Cr., Mt. Coot-tha, 5 miles W.byS. of Brisbane. *Co.* Stanley.; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 98, p. 2 (1894).

2280. —— ——. *Assoc.with* Iron Pyrites, Malachite, and Azurite. *Loc.* Por. 140, Par. of Dixon, 13 miles E. of Esk Rail. Stn., 70 miles (by rail and road) N.W.byW. of Brisbane. *Co.* Stanley (*ante*). *Assay*: Copper = 18·2 per cent. *Ref.* A.R., 1908, pp. 156, 157.

2280A. —— ——. *Assoc.with* Tenorite and Malachite. *Loc.* Mt. Lindsay, 32 miles S.S.W. of Beaudesert. *Co.* Ward; *Dist.* Moreton. *Ref.* B.D.

2281. —— ——. *Assoc.with* Iron Pyrites, Galena, and Zinc-Blende, in quartz reef. *Loc.* Friend's Claim, Barmundoo (Tableland) Goldfield, 28 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Assay*: Gold, 14 dwt. 16 gr.; Silver, 2 oz. 2 dwt. 11 gr. per ton. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

2282. —— ——. *Assoc.with* Azurite and Malachite, in garnet rock and limestone *Loc.* P.A. Diglun Cr., nr. Barmundoo Out Stn., 21 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 162, p. 9 (1901).

2283. —— ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel, and Zinc-Blende in quartz reef. *Loc.* Rogers's Claim, Bompa Goldfield, 44½ miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Assay*: Gold, 16 dwt. 8 gr.; Silver, 1 oz. 9 dwt. 9 gr. per ton. *Ref.* G.S.Q. Pub. 58, p. 7 (1890).

2284. —— ——. *Assoc.with* Gold, Iron Pyrites, Zinc-Blende, and Galena, in quartz and calcite. *Loc.* Mt. Jacob Claim, Stand-by Reef, Bompa Goldfield (*ante*). *Assay*: Gold = 9 dwt. 19 gr.; Silver = 1 oz. 15 dwt. per ton. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

2285. —— ——. *Assoc.with* Magnetite, Actinolite, and Epidote, in garnet rock. *Loc.* Shaft above Blue Bag, Glassford Cr. Copper Mines, Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne Valley line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.M.

2286. —— ——. *Assoc.with* Bornite, Cuprite, Tenorite, Malachite, Azurite, Hematite, Magnetite, Galena, Garnet, Zinc-Blende, Chlorite, and Calcite. *Loc.* Glassford Cr. Copper Mines, Glassford Cr. (*ante*). *Ref.* G.S.Q. Pubs. 150, pp. 5-7 (1900), and 194, p. 28 (1904).

2287. —— ——. *Assoc.with* Native Copper, Cuprite, Tile Ore, Malachite, Azurite, Iron Pyrites, Magnetite, Hematite, Limonite, and Calcite. *Loc.* Many Peaks Copper Mines, Deception Cr., 2 miles W. of Nevertire, 58 miles (by rail) S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 150, p. 8 (1900), and 194, p. 28 (1904).

2287A. —— ——. *Assoc.with* Pyrrhotite. *Loc.* Many Peaks Copper Mine, Deception Cr. (*ante*). *Ref.* B.D.

2287B. —— ——. *Assoc.with* Gold, Iron Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, and Ironstone, in crystalline limestone, etc. *Loc.* Mt. Hector Copper Mine, E. side of Dawe's Range, about 12 miles W.N.W. of Many Peaks Rail. Stn., Boyne Valley line, about 70 miles (by rail and road) S. of Gladstone, Monal Goldfield. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* Q.G.M.J., vol. 4, pp. 174-177 (1903).

2288. —— ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, Zinc-Blende, and Galena, in quartz and calcite. *Loc.* Advance Reef, Norton Goldfield, 33 miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 21, p. 6 (1885), and 208, p. 11 (1907), and G.S.M.

2289. —— ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Scorodite, in quartz. *Loc.* Bald Hills Reef, Norton (Milton) Goldfield (*ante*). *Assays*: *See* No. 4266. *Ref.* G.S.Q. Pub. 208, pp. 13, 14 (1907).

2290. —— ——. *Assoc.with* Gold, Silver, Redruthite, Azurite, Malachite, Iron Pyrites, Mispickel, Zinc-Blende, and Scorodite, in quartz. *Loc.* Chandler's Reef, Norton Goldfield (*ante*). *Assay*: *See* No. 4269. *Ref.* G.S.Q. Pub. 208, p. 18 (1907).

2291. —— ——. *Assoc.with* Gold, Silver, Iron Pyrites, Galena, and Zinc-Blende, in quartz. *Loc.* Galena Reef, Norton Goldfield (*ante*). *Assay*: *See* No. 3048. *Ref.* G.S.Q. Pub. 208, pp. 22-24 (1907).

2292. —— ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz. *Loc.* Little Wonder Reef, Norton Goldfield (*ante*). *Assay*: *See* No. 4280. *Ref.* G.S.Q. Pub. 208, p. 29 (1907).

2293. —— ——. *Assoc.with* Iron Pyrites. *Loc.* Long Tunnel, Norton Goldfield (*ante*). *Ref.* L.C.B.

2294. —— ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz. *Loc.* Sulphide Reef, Norton Goldfield (*ante*). *Assay*: *See* No. 4292. *Ref.* G.S.Q. Pub. 208, p. 38 (1907).

2295. —— ——. *Assoc.with* Malachite, in small vein. *Loc.* near Arthur Reef, Targinie Goldfield, 4 miles N.N.W. of Yarwun Rail. Stn., North Coast line, 15 miles (by rail and road) N.W.byW. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* B.D.

2295A. —— ——. *Assoc.with* Gold, Silver, Galena, and Zinc-Blende, in quartz reef in diorite country. *Loc.* Britannia Mine, north of Lake Learmouth, Canoona Goldfield, 35 miles N.byW. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Assay*: *See* Gold. *Ref.* B.D.

2296. —— ——. *Assoc.with* Gold and Silver. *Loc.* about ¼ mile from Baree Rail. Stn. (Mt. Morgan line), 23 miles (by rail) S.S.W of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Assays*: (1) Gold = trace, Silver = 5 dwt. per ton, Copper = 6·8 per cent.; (2) Gold = trace, Silver = 11 dwt. per ton, Copper = 3·9 per cent. *Ref.* A.R., p. 47 (1906).

2296A. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Jubilee Reef, Morinish Goldfield, 29 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* Q.M.

2297. Copper Pyrites. *Assoc.with* Iron Pyrites, Galena, and Zinc-Blende, in quartz reef. *Loc.* Mary Florence Mine, Blackfellow's Gully, Morinish Goldfield (*ante*). *Ref.* A.R.D.M., 1885, p. 60, and G.S.M.

2298. —— ——. *Assoc.with* Gold, Silver, and Iron Pyrites, and with traces of Malachite, Azurite, Galena, Witherite, Earthy Hematite, Barytes, and Red Jasper, in massive lode of quartzite, ironstone, and shale. *Loc.* Great Fitzroy Copper Mine, Mt. Chalmers, 19 miles (by rail) N.E. of Rockhampton (Emu Park line), Cawarral Goldfield. *Co.* Livingstone; *Dist.* Port Curtis. *Mean Analysis*: Gold = 2 dwt. 19 gr., Silver = 16 dwt. 10 gr. per ton, Copper = 3·8 per cent. *Ref.* G.S.Q. Pub. 216 (1907).

2299. —— ——. *Assoc.with* Gold, Iron Pyrites, and Pyrrhotite, in quartz reef. *Loc.* Hector Mine, on Crocodile Cr. Rd., 6 miles S. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 125, p. 27 (1897), and G.S.M.

2300. —— ——. *Assoc.with* Malachite and Azurite. *Loc.* Conachan's Sel., W. of Quarry Cr., 3 miles E. of Stanwell Rail. Stn., 19 miles by rail and road S.W.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub 131, p. 21 (1898).

2301. —— ——. *Assoc.with* Gold and Copper oxides. *Loc.* Gt. Northern Copper Mine, Rosewood Goldfield, 32 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* G.S.M.

2302. —— ——. *Assoc.with* Magnetite and Hematite. *Loc.* Iron Knob, Stanage Point, 37 miles E.N.E. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Assay*: Iron = 60 per cent., Phosphorus *nil*. *Ref.* G.S.Q. Pub. 194, p. 12 (1904).

2303. —— ——. *Assoc.with* Mispickel and Zinc-Blende. *Loc.* Mine near Cania, Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Assay:* Gold = 7 oz. per ton. *Ref.* A.R.D.M., 1894, p. 34.

2304. —— ——. *Assoc.with* Gold, Molybdenite, and Calcite. *Loc.* Mt. Rose Reef, Cania Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 9 (1885).

2305. —— ——. *Assoc.with* Cuprite, Azurite, and Iron Pyrites. *Loc.* Stevens' Copper Lode, Cania Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 69 (1885).

2306. —— ——. *Assoc.with* Copper carbonate, Iron Pyrites, Manganese-dioxide, Magnetite, and Hematite. *Loc.* Callide or Five-mile Copper Mine, Kroombit, 50 miles S.S.W. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.M.

2306A. —— ——. *Assoc.with* Cuprite, Malachite, Azurite, Iron Pyrites, Hematite, Magnetite, and Limonite, in gossan lodes. *Loc.* M.L. (262), Kroombit Copper Mines, 4¼ miles E.S.E. of Kroombit Hd. Stn., 56 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 98 (1906).

2307. —— ——. *Assoc.with* Gold, Silver, Native Copper, Redruthite, Cuprite, Malachite, Azurite, Galena, Molybdenite, Iron Pyrites, and Ironstone, in granite and sandstone. *Loc.* Moonmera Copper Mines, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 195, pp. 18-20 (1904).

2308. —— ——. *Assoc.with* Gold and Iron Pyrites. *Loc.* Champion Lease (190), head of Champion Gully, 1 mile S.E. of Mt. Morgan Rail Stn., Mt. Morgan (Crocodile Cr.) Goldfield. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 132, p. 12 (1893).

2309. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Clanricarde Mine, 4 miles S.S.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Average of Assays*: Gold = 5 oz. 11 dwt. 18 gr. per ton. *Ref.* G.S.Q. Pub. 103, p. 30 (1895).

2309A. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Crow's Nest Mine, 3 miles W.N.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 9 (1898), and G.S.M.

2310. —— ——. *Assoc.with* Copper carbonate, Mispickel, Ironstone, and Biotite, in quartz lode. *Loc.* Dee R. Copper Mines, above Dundee, 20 miles S.S.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 155, p. 8 (1901).

2310A. —— ——. *Assoc.with* Epidote and Calcite, in quartz lode. *Loc.* 1½ miles S. of Dee Alluvial Gold Mine, 6 miles N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* B.D.

2311. —— ——. *Assoc.with* Iron Pyrites, in slate. *Loc.* Mt. Alexander Mine, 8 miles E.S.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 143, p. 26 (1899).

2312. —— ——. *Assoc.with* Magnetite. *Loc.* Mohawk Mine, nr. Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* O.R.

2313. —— ——. *Assoc.with* Gold, Silver, Iron Pyrites, Hematite, Magnetite, Limonite, Gothite, Satin-Spar, and Pyrolusite, in vesicular quartz, quartzite, kaolin, and ironstone. *Loc.* Mt. Morgan Gold Mine, Mt. Morgan (Crocodile) Goldfield (*ante*). *Ref.* (and *Assays*), G.S.Q. Pub. 17 (1884), Pub. 47 (1888), Pub. 83 (1892), and Pub. 132 (1898).

2313A. —— ——. *Assoc.with* Iron Pyrites and Selenite, in veins. *Loc.* Mt. Morgan Gold Mine, Mt. Morgan Goldfield (*ante*). *Ref.* B.D.

2314. —— ——*Assoc.with* Malachite, in quartzose rock. *Loc.* Old Dee Copper Mine, 3 miles N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* A.R., p. 85 (1907).

2314A. —— ——. *Assoc.with* Epidote. *Loc.* Old Dundee Copper Mines, below Mt. Morgan, Dee R., 22 miles S.S.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* B.D.

2315. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Queen of the Valley Mine, between Dee R. and Crocodile Cr., 4 miles N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 13 (1898).

2316. —— ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende. *Loc.* Roxburgh Mine, between Dee R. and Gavial Cr., 6 miles N.E.byE. of Mt. Morgan Rail. Stn., Mount Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 14 (1898).

2316A. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz and calcite. *Loc.* Struck Oil Lease (186), 5 miles E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 103, p. 29 (1895), and 132, p. 14 (1898), and G.S.M.

2317. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Welcome Mine, Champion Gully, 1¼ miles N.E. of Mt. Morgan Rail. Stn., Mount Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 13 (1898).

2318. —— ——. *Assoc.with* Gold, Silver, Redruthite, Pyrrhotite, Mispickel, Galena, and Stibnite, in quartz. *Loc.* Mariner's Reef, Black Snake Goldfield, 10 miles S. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Analysis of Ore:* Iron, 31·0; Copper, 18·5; Sulphur, 23·0; Arsenic, 14·2; Antimony, 1·1; Lead, 11.3 per cent. *Assays*: Silver, 23 oz.; Gold, 1 oz. 2 dwt. per ton, etc. *Ref.* G.S.Q. Pub. 28, p. 6 (1886).

2319. —— ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel, in quartz. *Loc.* Rose, Shamrock, and Thistle Mine, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

2320. —— ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Galena, and Zinc-Blende, in quartz and schorl. *Loc.* Victoria Reef, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

2320A. —— ——. *Assoc.with* Gold and Silver. *Loc.* Blue Bell P.A., 32 miles from Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* B.D.

2321. —— ——. *Assoc.with* Redruthite, Cuprite, Tenorite, Malachite, Azurite, Iron Pyrites, Hematite, and Limonite, in lodes in syenitic granite. *Loc.* Calgoa Copper Mines, Thunder Cr., 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 207, pp. 5-11 (1907).

2322. —— ——. *Assoc.with* Azurite, Malachite, Galena, and Mispickel, in granitic lode. *Loc.* West Calgoa Lode, Sel. 1393, 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

2323. —— ——. *Assoc.with* Felspar, Olivine, and Orthoclase, in quartz. *Loc.* Sel. (1822), Filly Flat, Gigoomgan Run, 35 miles W.S.W. of Maryborough. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

2324. —— ——. *Assoc.with* Redruthite. *Loc.* Marari Cr., br. of Eel Cr., 10½ miles S.S.W. of Gympie. *Co.* Lennox (*ante*). *Ref.* O.R.

2325. —— ——. *Assoc.with* Iron Pyrites, Galena, and Zinc-Blende. *Loc.* Mellor and Elworthy's Stn., Imbell, 8 miles from Kandanga, 15 miles S. of Gympie. *Co.* Lennox (*ante*). *Ref.* A.R., 1907, p. 93.

2326. —— ——. *Assoc.with* Gold, Cuprite, Redruthite, Malachite, Iron Pyrites, Bismuthinite, Magnetite, and Limonite. *Loc.* Kabonga Mine, Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 125, p. 36 (1897).

2327. —— ——. *Assoc.with* Tourmaline. *Loc.* United Reef, Kilkivan Goldfield (*ante*).

2328. —— ——. Mt. Coora, 8 miles S.S.E.of Kilkivan. *Co* Lennox; *Dist.* Wide Bay. *Ref.* G.S.M.

2329. —— ——. *Assoc.with* Redruthite, Cuprite, Tile Ore, and Malachite, in quartz. *Loc.* Teebar Copper Lode, Munna Cr., nr. Clifton Stn., 2 miles S. of Boompa Rail. Stn. (Gayndah Br. line). *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 7 (1890), and G.S.M.

2330. —— ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and Zinc-Blende, in quartz. *Loc.* Ortt's Mine, Yorkey's Goldfield, 9 miles N. of Kilkivan. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 8 (1902).

2331. Copper Pyrites. *Assoc.with* Galena and Zinc-Blende. In well-defined quartz formation, 4 ft. wide, in granite country. E. and W. lodes crossing it. *Loc.* Mt. Widgee, 14 miles W. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* A.R., p. 163 (1908).

2332. —— ——. *Assoc.with* Tetrahedrite, Azurite, Malachite, Iron Pyrites, Galena, Zinc-Blende, and Calcite, in slate, diorite, andesite, syenite, and quartzite. *Loc.* Blue Bell Copper Mine, Amamoor Cr., 19 miles S.S.E. of Gympie. *Co.* March (*ante*). *Ref.* Q.G.M.J., vol. 8, pp. 524-6 (1907).

2333. —— ——. *Assoc.with* Galena, in lode. *Loc.* St. Aignan (Misima) Is., Louiscada Archipelago, 379 miles E.byS. of Port Moresby, **Brit. New Guinea.**

Copper silicates. *See* Chrysocolla, Dioptase.

—— Smelting Works. *See under* separate heading, "Smelting Works in Queensland.

—— statistics. *See tables,* Pls. 39, 45, 46, 46A, *and diagrams,* Pls. 51, 57.

—— sulphates. *See* Chalcanthite, Linarite.

—— sulphides. *See* Bornite, Bournonite, Chalcostibite, Copper Pyrites, Covelline, Redruthite, Tetrahedrite.

—— and tin sulphide. *See* Stannite.

Copper Uranite. *Syn.* Chalcolite, *which see.*

Copper (Variegated). *Syn.* Bornite, *which see.*

—— values in London. *See under* Metal Values.

Copper Vitriol. *Syn.* Chalcanthite, *which see.*

Copperas. *Syn.* Green Vitriol, Melanterite. *Compo.* Sulphate of iron. *Colour*, greenish to white, yellowish on exposure. *H.* = 2. *Sp.gr.* = 1·8. Soluble, astringent.

2334. —— (stalactitic). Golden Gate Reef, 4 miles N.W. of Croydon. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

2335. ——. *Assoc.with* Chalcanthite. *Loc.* North Australian Mine, Watsonville, head of James Cr., 7 miles E.S.E. of Stannary Hills (Chillagoe Br. line). *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.M.

2336. ——. *Assoc.with* Iron Pyrites. Gilberton, 66 miles S. of Georgetown, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

2337. ——. *Assoc.with* Gold, Copper Pyrites, Bornite, and Chalcanthite, in diorite. *Loc.* Mt. Clifford Mine, 9½ miles (by road) N.W. of Anakie Rail. Stn. (Central line). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 127, p. 2 (1898).

2338. ——. *Assoc.with* Gold, Tenorite, Iron Pyrites, Galena, Zinc-Blende, and Calamine, in quartz. *Loc.* Beer and Dawson's Lease, 1 mile E. of Yorkey's Goldfield, 10 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 179, p. 8 (1902).

Copperfield, 5 miles S.S.W. of Clermont. *See maps,* Pls. 10, 11. *Lat.*, 22° 50′; *Long.*, 147° 41′. *Min.Ref.* Atacamite, *see* 137; Azurite, 234; Barytes, 269A; Copper carbonate, 1949; Copper oxide, 2049; Copper Pyrites, 2269; Cuprite, 2469; Galena, 3023, 3024; Gold (alluvial), 3328, 3329, (reef) 4157-4162, (nugget) 3441c; Hematite, 4766; Iron Pyrites, 5322-5325; Limestone, 662; Malachite, 6333; Manganese-dioxide, 6448; Mispickel, 6770; Selenite, 4645; Tenorite, 7735; Tile Ore, 2568.

Geological Note: The rocks include serpentine, clay slates, and schists belonging to the Devonian System. They contain numerous quartz reefs carrying free gold, and also several mineralised lodes carrying gold and copper. The famous Peak Downs copper lode is in association with a narrow belt of serpentine in schist country. *See* G.S.Q. Pub. No. 27 *for details.*

—— Co. Cook Dist. *See map,* Pl. 8.

—— Road, 2½ miles S.W. of Clermont. *Min.Ref.* Limestone, *see* 660.

—— R., nr. Oak Park Stn. *Min.Ref.* Barytes, *see* 269A.

Coppermine Cr., Leichhardt R., Cloncurry. *Min.Ref.* Azurite, *see* 171; Chrysocolla, 1513; Copper Pyrites, 2108; Gold (alluvial) 3184; Limonite, 5813; Malachite, 6174-6177; Redruthite, 7262-7265; Tile Ore, 2531.

—— Range. S.S.W. of Mackay. *Min.Ref.* Coal, *see* 1705

Coral Cr, 50 miles S.S.W. of Bowen. *Min.Ref.* Native Copper, *see* 2001; Prehnite, 7075.

—— Queen Reef, Towalla Goldfield. *Min.Ref.* Gold, *see* 3780; Iron Pyrites, 5082.

—— Tree P.C., 1 E., 1 W. Mines, Bee Cr. Diggings. *Min.Ref.* Galena, 3004; Gold, 4097, 4098; Iron Pyrites, 5290; Siderite, 7411A; Zinc-Blende, 8166.

Coralline limestone. *Var.* of Calcite, *which see.*

Corbett's Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211 (nugget) 3437A.

Cordalba, N.W. of Maryborough. *Lat.*, 25° 9′ S.; *Long.*, 150° 12′ E. *Min.Ref.* Mispickel, *see* 6806; Opal, 6998A; Scorodite, 7377.

Coreena Co. Mitchell Dist. *See map*, Pl. 18.

Coreena Leases Artesian and Sub-artesian Bores. *See under* Artesian Bores. No. 227.

Corella River Mining Centre, Cloncurry. *Includes* East Corella, Pearl, Springs, Lady, Wee Macgregor, Lady South, Melba, Secret, Rosebud, Jubilee, Sunset, Enquiry, Mt. Lidster, Charley's Creek, Groups of Copper Mines, *which see. Min.Ref.* Azurite, *see* 170A; Copper (ore), 2018A; Garnet, 3094; Graphite, 4569A; Limonite, 5798; Magnetite, 5965; Malachite, 6158; Redruthite, 7253; Staurolite, 7599; Tile Ore, 2529. *See under* Govt. Ming. Jour. Report No. 56.

Corella Sel. Sub-artesian Bore. *See under* Artesian Bores. No. 228.

Corinda Leases Artesian and Sub-artesian Bores. *See under* Artesian Bores. No. 229.

Coringa, 35 miles N.byW. of Miles. *Min.Ref.* Coal, *see* 1677.

Corio Bore. *See under* Artesian Bores. No. 236.

Cork Lease Bore. *See under* Artesian Bores. No. 230.

—— Stn., Diamantina R., S.W.byS. of Winton. *Min.Ref.* Halite, *see* 4653; Kaolin, 5684.

Cork-tree Cr., Croydon Goldfield. *Min.Ref.* Gold, *see* 3537 and 3538; Ironstone, 5500.

Corn Tweed Hill, nr. Homebush, W. of Mackay. *Min.Ref.* Felspar, *see* 2643; Mica, 6561.

Cornish Jim s Gully, 3 miles N.byE. of Mt. Leyshon. *Min.Ref.* Gold (alluvial), *see* 3257.

—— —— Tunnel (*ante*). *Min.Ref.* Gold, *see* 3983.

Cornstalk Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1073; Wolfram, 8014.

Cornucopia Mine, Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2816; Gold, 3806; Iron Pyrites, 5089; Zinc-Blende, 8091.

Corona Bores. *See under* Artesian Bores. No. 231.

—— Stn., 60 miles N.W. of Longreach. *Min.Ref.* Barytes, *see* 278; Ironstone, 5603.

Coronet M.C. (241), Cloncurry. *Min.Ref.* Limonite, *see* 5784; Malachite, 6145; Tile Ore, 2523.

Corporation Well Sub-artesian Bore. *See under* Artesian Bores. No. 117.

Corrigan's Claim, Spring Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1020.

Corundum. *Compo.*, Pure alumina. *H.* = $8\frac{1}{2}$-$9\frac{1}{4}$ (Anakie Sapphires). *Sp.gr.* = 3·9-4·1.

MINERAL AND GEOLOGICAL NOTE: Anakie is the only field in the State where corundum is obtained in commercial quantities, but there are other places where the mineral is found which have some prospective value. At Anakie the corundum occurs associated with sapphires and other gemstones in old alluvial deposits spread over an area of about twenty square miles. The stones are usually less than an inch in diameter, and all are distinct crystals, although more or less corroded by the basalt magma which once contained them. Crystals of coarse corundum have been found which contain sapphires in the centre, and sometimes perfect gemstones are obtained in this way. *See* G.S.Q. Pub. No. 172 (1902) for details.

USES: The corundum and sapphires found at Anakie have been proved to be valuable for mechanical purposes principally on account of their freedom from fractures, impurities, and granulation. They are chiefly made into small bearings and pivots for parts of machines and engines running at very high speeds.

DISCOVERY: Sapphires were discovered at Anakie in 1870.

SAPPHIRE FIELDS: Anakie (Withersfield); Centres—Retreat Cr. (Sapphiretown), Policeman and Tomahawk Creeks, *which see.*

Corundum—*continued:*

Statistical Tables and Diagrams: *See* Pls. 44, 45, 46, 46a, 56.

Geological Publications: G.S.Q. Pub. No. 172 (1902), and Gov. Ming. Jour., vol. 6, pp. 112-117 (1905).

Statistical Note: The most productive year in yield of Sapphires (1907), £40,500; second ditto, (1906), £18,110; third, (1908), £15,200; fourth, (1904), £10,575. The lowest productive year in yield of Sapphires (1900), £900; second ditto, (1892), £4,437; third, (1893), £4,500; fourth, (1902), £5,000. Total value of production of Sapphires (1890 to 1912), £226,302. Percentage of total value of Sapphires to total value of mineral production, 0.22.

Bibliography. *Principal Ref.* Dunstan (B.)—G.S.Q.P. No. 172 (1902); Jack (Dr. R. L.)—G.S.Q.P. No. 81 (1892); Ball (L. C.)—Q.G.M.J., Rep. No. 55 (1905). *See under* Geol. Surv. Pub. List and Govt. Ming Jour. List for titles.

—— **Barklyite,** *see* 2365.

—— **Ruby,** *see* 2358, etc.

2339. —— **Sapphire** (*var.*) (blue, etc.). In alluvial deposits. *Loc.* Burrandowan Station, 20 miles S.W. of Kingaroy Rail. Stn. (Kilkivan line), 140 miles (by rail and road) S.W. of Maryborough. *Co.* Fitzroy; *Dist.* **Burnett.**

2339a—— —— (inferior, blue). *Assoc.with* Amethyst, Cairngorm, Ilmenite, Magnetite, Pleonaste, Topaz, &c., &c. *Loc.* Kingar Cr., 45 miles W. of Gayndah. *Co.* Wicklow; *Dist.* Burnett.

2340. ——. *Assoc.with* Chalcedony and Rock Crystal, in alluvial deposits. *Loc.* Rossville Tin Mines, Wallaby Cr. (trib. of Annan River), 25 miles S. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* O.R.

2341. —— (blue, green). In alluvial deposits. *Loc.* Henrietta Creek, Jordan Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* O.R.

2342. —— (green, blue, yellow, pink, purple). *Assoc.with* Gold, in alluvial deposits. *Loc.* Jordan Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

2343. ——. *Assoc.with* Ruby, Corundum, Garnet, Zircon, Topaz, and Tourmaline, in alluvial deposits. *Loc.* Jordan Creek, Jordan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 157, p. 6 (1898).

2344. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Russell Goldfield, 15 to 20 miles W.N.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 81, p. 2 (1892).

2345. —— (inferior). *Assoc.with* coarse Corundum, in alluvial deposits. *Loc.* Percy River, about 4 miles below Percyville, and about 36 miles S.S.W. of Charleston, Etheridge Goldfield. *Co.* Percy; *Dist.* Cook. *Ref.* B.D.

2346. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Gilbert River, about 50 miles S.E. of Charleston, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 81, p. 2 (1892).

2347. ——. *Assoc.with* Gold, Cassiterite, Stannite, Diamond, Topaz, Zircon, and Amethyst, in alluvial deposits. *Loc.* Broadwater Creek, and its tributaries, Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 31 (1898).

2348. —— (yellow, green, blue, pink). *Assoc.with* Zircon, Beryl, Garnet, Spinel, Diamond, Tourmaline, Topaz, Cairngorm, Amethyst, Rock Crystal, Cassiterite, and traces of gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot, Sugar Loaf, Lode, Arbouins, Cannon, and Kettle Swamp Creeks, and Severn River, Stanthorpe (*ante*). *Ref.* G.S.Q. Pub. 120 (1898), and B.D.

2349. —— (bright blue, pale yellow). *Assoc.with* Cassiterite, as small pebbles in alluvial deposits. *Loc.* junction of Severn River and Quart Pot Creek, ½-mile N.W. of Stanthorpe (*ante*). *Ref.* B.D.

2350. ——. *Assoc.with* Zircon, Tourmaline, Rock Crystal, Cairngorm, and Cassiterite, in alluvial deposits. *Loc.* Camp Reserve, Spring Creek, 6 miles W.byS. of Stanthorpe (*ante*). *Ref.* B.D.

2351. ——. *Assoc.with* Cairngorm, Garnet, Spinel, Zircon, Topaz, Diamond, Cassiterite, and Gold, in alluvial deposits. *Loc.* Spring Creek and its tributaries, 2¾ miles W. of Stanthorpe (*ante*). *Ref.* G.S.Q. Pub. 120, p. 32 (1898).

2352. —— (blue). *Assoc.with* Topaz, in alluvial deposits. *Loc.* Thirteen-mile Creek, trib. of Pike Creek, about 10 miles W.N.W. of Stanthorpe (*ante*).

2352a.—— (blue, green). *Assoc.with* Corundum, Ilmenite, Zircon, Pleonaste, Hornblende, etc., in basaltic soil, Dalrymple Cr., nr. Goomburra Rail. Stn. (Allora Branch). *Loc. Por.* 113v etc., *Par.* Goomburra. *Co.* Merivale; *Dist.* Darling Downs.

2353. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 57 (1887).

2353A.——. *Assoc.with* Gold, Chalcedony, Lydianstone, Jasper, and Zircon, in alluvial deposits. *Loc.* Por. 14v, Bunerba, ½-mile S. of Don R., about 39 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* Q.G.M. Jour., vol. 5, pp. 610, 611 (1904).

2354. —— (blue, green). Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* O.R.

2355. —— (colourless white, blue, green, yellow, orange, Asteria, Cat's-eye, Oriental moonstone). *Assoc.with* Ilmenite, Magnetite, Rutile, Spinel, Zircon, Garnet, Chalcedony, Cairngorm, Jasper, Amethyst, Topaz, Diamond, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Creeks, Anakie Sapphire Fields, 193 miles (by rail) W. of Rockhampton (Central line). *Co.* Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pubs. 81 (1892), 172 (1902).

2356. —— (blue, yellow). In bluish-grey alluvial deposits. *Loc.* Googa Googa Creek, trib. of Emu Creek, 5 miles S.byW. of Blackbutt, and about 26 miles N.N.W. of Esk Rail. Stn. (Brisbane-Valley br .line). *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* B.D.

2357. ——. *Assoc.with* Ruby, Spinel, Garnet, Topaz, Zircon, and Gold, in alluvial deposits. *Loc.* Wallace and Eldridge's Claim, Seven-mile Diggings, 7 miles S.E. of Nanango, and 123 miles N.W.byN. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* L.C.B.

2358. —— **Ruby** (*var.*). Cambpell Creek, trib. of Palmer River, 36 miles S. of Laura Rail. Stn. (Cooktown line). *Co.* Chelmsford; *Dist.* **Cook.** *Ref.* O.R.

2359. ——. Rocky Tate River, W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 190, p. 29 (1904).

2360. ——. *Assoc.with* Sapphire, Corundum, Zircon, Garnet, Topaz, and Tourmaline, in alluvial deposits. *Loc.* Jordan Creek, between Atherton and Geraldton, and about 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 150, p. 14 (1900), and 159, p. 6 (1901). *Note.*—The rubies found at this locality are sometimes several carats in weight, a few are of good colour, but generally they have a purple or amethyst tint.

2361. ——. *Assoc.with* Gold, Bismutite, Magnetite, Limonite, Manganese, and Garnet, in alluvial deposits. *Loc.* Agate Creek, trib. of Robertson River, 38 miles S. of Georgetown, and 21 miles S.S.W. of Charleston, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* L.B. 1, p. 940 (1887).

2362. ——. *Assoc.with* Sapphire, Zircon, etc., in alluvial deposits. *Loc.* Stanthorpe Mineral Field, 207 miles (by rail) S.W. of Brisbane (Southern line). *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* Q.M.

2363. ——. Newsome's Claim, Retreat Creek, Anakie Sapphire Fields, 193 miles (by rail) W. of Rockhampton (Central line). Co. Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 172, p. 17 (1902).

2364. ——. *Assoc.with* Gold, Spinel, Sapphire, Garnet, Topaz, and Zircon, in alluvial deposits. *Loc.* Wallace and Eldridge's Claim, Seven-miles Diggings, 7 miles S.E. of Nanango, and 123 miles N.W.byN. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* L.C.B.

2365. —— **Barklyite,** *sub.var.* of Ruby (purple opaque). *Assoc.with* with Cassiterite, in alluvial deposits. *Loc.* Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co* Bentinck; *Dist.* Darling Downs. *Ref.* Q.M.

2365A.—— As irregular grains of pale and dark purple colour, in alluvial deposits. *Loc.* Vicinity of Quart Pot Creek, Stanthorpe (*ante*). *Ref.* L. Corrie.

2366 **Corundum.** *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Rossville, Wallaby Cr., trib. of Annan R., 25 miles S. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* B.D.

2367. ——. *Assoc.with* Garnet, Zircon, Sapphire, Oriental Ruby, Tourmaline, and Topaz, in alluvial deposits. *Loc.* Jordan Cr. Goldfield, 22 miles W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 157, p. 6 (1898).

2368. ——. *Assoc.with* Sapphire, etc., in alluvial deposits. *Loc.* Percy R., 4 miles below Percyville, about 36 miles S.S.E. of Charleston, Etheridge Goldfield. *Co.* Percy; *Dist.* Cook. *Ref.* B.D.

2369. —— in basaltic soil, 1½ mile N.E. of Meringandan Rail. Stn. (Crow's Nest line), 12½ miles (by rail and road) N. of Toowoomba. *Co.* Aubigny; *Dist.* Darling Downs. *Ref.* B.D.

2370. Corundum. *Assoc.with* precious varieties of Sapphire, and with Zircon, Topaz, Cassiterite, etc., in alluvial deposits. *Loc.* Stanthorpe Mineral Field, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* P.R.S.Q., vol. 4, p. 57 (1887).

2370A.—— (greenish, brown, bluish). *Assoc.with* blue and green Sapphire, Ilmenite, Zircon, etc., in basaltic soil. *Loc.* Dalrymple Cr., nr. Goomburra Rail. Stn. (Allora Branch), Por. 113v., etc., *Par.* of Goomburra. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* B.D.

2371. —— (greenish and yellowish). *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Nettles Cr., 7 miles S.E. of Coolgarra, 8 miles E.byN. of Mt. Garnet Rail. Stn., (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* B.D.

2372. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Tully R., 42 miles S. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

2373. ——. *Assoc.with* precious varieties of Sapphire, and with Zircon, Topaz, etc., in alluvial deposits. *Loc.* Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton. *Co.* Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 172 (1902).

2374. —— **Emery** (*var.*). In beach sands (?) Southport, 50 miles (by rail) S.E. of Brisbane. *Co.* Ward; *Dist.* **Moreton.** *Ref.* P.R.S.Q., vol. 4, p. 57, (1887).

Cosmopolitan Gold Reef, Lane's Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3715.

—— Lease (42), Eidsvold Goldfield. *Min.Ref.* Galena, *see* 2734; Gold, 3637; Iron Pyrites, 5016; Mispickel, 6663.

—— Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1074; Kaolin, 5686.

Cost of crushing stone. *See under* Crushing Mill Charges.

Cottais's Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1075; Copper (native), 1999.

Couldery Bore. *See under* Coal Bores.

Couldery's Sel. (2), 3 miles E. of Alberton. *Min.Ref.* Coal, *see* 1777E.

Counties of Queensland. *See maps*, Pls. 2, 4, 6, 8, 10, 12, 14, 16, 18, and 20. List of counties is given under each District. *See* Districts.

Courthouse (Roma) Sub-Artesian Bore. *See under* Artesian Bores, No. 129.

Cousin Jack Reef, Sandy Cr., Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2232; Galena, 2938; Gold, 4035A; Iron Pyrites, 5251; Zinc-Blende, 8148.

Covelline. *Syn.* Covellite, Blue Copper. *Compo.*, Sulphide of copper. *Colour*, Indigo blue. *Streak*, lead-grey, black. *H.* = 1·5-2. *Sp.gr.* = 4·5-4·6. *Contents* (*max.*), Copper 66 per cent.

2375. ——. *Assoc.with* Copper Pyrites, Malachite, Chrysocolla, and Iron Pyrites, in quartz, quartzite, and schist. *Loc.* Ardath M.L. (656), Mt. Hope Group, Green's Cr., 4 miles S.W. of Mt. Hope, 53 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 47, 48 (1908).

2376. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Iron Pyrites, Limonite, and Calcite, in chloritic schist. *Loc.* Monarch Senior M.C. (352), Mt. Hope Group, 3 miles E. of Mt. Hope. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 42, 43 (1908).

Cow Paddock Bore. *See under* Artesian Bores. No. 229.

Coward's (Waiora) Bore. *See under* Artesian Bores. No. 397.

Cowley Br. and Liverpool Cr. Tramlines, S. of Mourilyan (junction of). *Min. Ref.* Steatite, *see* 7675A.

Cowley's Bore. *See under* Artesian Bores. No. 331.

Coxon's Sub-artesian Bore. *See under* Artesian Bores. No. 300.

Cracknell (Par. of) (Por. 2), Upper Flinders R. *Min.Ref.* Cerussite, *see* 1188B; Galena, 2712A; Gold (alluvial) 3191A, (reef) 3561A, 3561C; Iron Pyrites, 4970A; Magnetite, 5970A; Massicot, 6521A, 6521B.

Cradle Cr. Reef, Maytown, Palmer Goldfield. *Includes* Baal Gammon, Best Friend, Native Girl, and Wild Irish Girl Reefs. *Min.Ref.* Gold, *see* 3682.

Craig's Antimony Lease (Emily Reef), Northcote. *Min.Ref.* Cervantite, *see* 1304A; Gold, 3755; Iron Pyrites, 5056A; Stibnite, 7618.

Crane's Claim, Clermont Goldfield. *Min.Ref.* Gold, *see* 4149.

Craven's Caledonia Mine (Level No. 8), Charters Towers. *Min.Ref* Galena, *see* 2879; Gold, 3896; Iron Pyrites, 5160.

Craven Extd. G.M. L. (93), Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3638.

Creek, nr. Halifax Bay. *Min.Ref.* Bismuth Ore, *see* 355.

Creighton's Tin Mine, Mt. Amos, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 790; Tourmaline, 7828.

Crendon Bore. *See under* Artesian Bores. No. 306.

Crescent Creek Bore. *See under* Artesian Bores. No. 238.

—— G.M. Lease, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2927; Gold, 4020; Iron Pyrites; 5241; Zinc-Blende, 8140.

—— Lagoon, Rockhampton. *See* Water Analyses (Table of), Nos. 456, 459, 460, 464.

—— P.C., Kirk Diggings, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4014.

Cressbrook Cr., 12 miles N. of Esk. *Min.Ref.* Copper carbonate, *see* 1953; Copper ore, 2044; Copper Pyrites, 2274-2276; Galena, 3028, 3029; Iron Pyrites, 5333-5335; Molybdenite, 6861; Wolfram, 8036; Zinc Blende, 8174, 8175.

—— Estate Sub-artesian Bores. *See under* Artesian Bores. No. 232.

Crew's Prospecting Area, nr. Aldershot. *Min.Ref.* Coal, *see* 1818A.

Crinoidal Limestone. *Var. of* Calcite, *which see.*

Critchner's Mine, Agate Downs Goldfield. *Min.Ref.* Gold, *see* 3464.

Crockentigh Bore. *See under* Artesian Bores. No. 353.

Crocodile Creek Goldfield. Now Mt. Morgan Goldfield, *which see. See also* Gov. Ming. Jour., Report No. 11. *See also* Supplementary Report List, No. 9. *Min.Ref.* Gold (nugget), *see* 3448, (reef) 4331. *Geological Note.*—Granite, syenite, diorite, slate, greywacke, grit, and conglomerate are the prevailing rocks, the diorite intruding all the other rocks. Reefs occur in the granite. *See* G.S.Q. Pub. No. 92, p. 110, for details.

—— —— Road (Hector Gold Mine), 6 miles S. of Rockhampton. *Min.Ref.* Pyrrhotite, *see* 7162.

Crœsus Silver Mine, Star R. (Argentine) Silver Field. *Min.Ref.* Cerussite, *see* 1266; Galena, 2984; Minium, 6611.

—— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1076.

—— —— ——, Irvinebank. *Min.Ref.* Cassiterite, *see* 860; Fluorspar, 2659.

Cronin's Bore. *See under* Artesian Bores. No. 154.

Crooked Cr., br. of Walsh R., nr. Almaden Rail. Stn. *Min.Ref.* Galena, *see* 2792; Silver, 7459. *See also under* Gov. Ming. Jour., Report No. 59.

Cross's Sel., br. of Eel Cr., S.W. of Gympie. *Min.Ref.* Manganese-dioxide, *see* 6493A.

Cross-stone. *Syn.* Chiastolite, *which see.*

Crother's Bores. *See under* Artesian Bores. Nos. 187, 217.

Crown Lands, Reserve (200), S.W. of Beaudesert. *Min.Ref.* Coal, *see* 1782A.

—— Mine 1 S., Eidsvold Goldfield. *Min.Ref.* Stibnite, *see* 7610.

—— Reef, Copperfield. *Min.Ref.* Galena, *see* 3023; Gold, 4158; Iron Pyrites, 5322.

—— ——, Gympie Goldfield. *Min.Ref.* Gold, *see* 4501.

—— ——, Woodville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3764.

—— and Phœnix L. (361), Gympie Goldfield. *Min.Ref.* Gold, *see* 4425.

—— —— Extended Mine, Gympie Goldfield. *Min.Ref.* Gold, *see* 4426.

Crow's Cr., Barmundoo Run. *Min.Ref.* Gold, *see* 4241-4243; Hematite, 4779; Iron Pyrites, 5358; Mispickel, 6785; Zinc-Blende, 8184. *See also* Supplementary List, No. 18.

Crow's Nest (Ravensbourne) (Rail. Stn.). Lat., 27° 15′. Long., 152° 10′. *Min.Ref.* Actinolite, *see* 4864; Beauxite, 289; Bornite, 432; Cairngorm, 7182; Cassiterite, 1169, 1170; Copper Pyrites, 2273; Epidote, 2598; Galena, 3030; Gold, 3366C, 4193; Ilmenite, 4906; Iron Pyrites, 5331; Pleonaste, 7591, 7591A; Pyrrhotite, 7161D; Rock Crystal, 7195; Scorodite, 7374; Tourmaline, 7866A; Wolfram, 8037, 8038; Zircon, 8226. *See also under* Gov. Ming. Jour., Report No. 29.

GEOLOGICAL NOTE: The country rocks include granite, diorite, slate, sandstone, and quartzite. The granite and diorite form intrusive masses in the sedimentary rocks, the granite containing several reefs which have been proved to be gold-bearing.

—— —— Mine, Mt. Morgan Goldfield. *Min.Ref.* Copper Pyrites, *see* 2309A; Gold, 4362.

—— —— Sub-artesian Bores. *See under* Artesian Bores. No. 233.

Croydon Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 17, 137

—— Gold Bores (Iguana and Highland Mary). *See under* Gold Bores.

Croydon Goldfield—

SITUATION: *See maps*, Pls. 20, 21, 26. The town is 94 miles (by rail) E.S.E. of the port of Normanton. *Cos.* Esmeralda, Etheridge, Glenora, Strathmore, Surrey, and Woolgar; *Dists.* Burke and Cook. Centre about *Lat.* 18° 12′ S.; *Long.* 142° 16′ E.

DISCOVERY: In 1885, by W. C. Brown, Manager of Croydon Downs Station. Payable gold found in 1886, by Messrs. Brown and Aldridge, who, in consequence, received £1,000 reward from the Queensland Government.

RAILWAY BASE: Croydon Rail. Stn. is the base for the Croydon Goldfield and for the Stanhills Tinfield.

POPULATION: 2,319 (Census, 1911).

AREA: 2,544,640 acres (3,976 sq. miles).

PROCLAMATION OF FIELD: First gazetted, 18th Jan., 1886. Last alteration, 2nd June, 1910, as follows:—Commencing on the Carron River where it intersects the east boundary of Oakland Park Block, near Creen Creek Telegraph Station, and bounded thence by part of the east boundary of that block, the east boundaries of Emma Vale and Ella Vale Blocks, part of the north and the east boundaries of Violet Block, part of the east boundary of Waterloo No. 2 Block, the north boundary of Birkenhead No. 1 Block, and part of the north boundary of Liverpool No. 1 Block East, in all fourteen miles; thence by a line south-easterly to a point on Esmeralda Creek seven chains above a bloodwood tree marked broad-arrow over W. over XXVI; thence by another line south-westerly to the boundary of the Woolgar Gold Field at a point about two and a-quarter miles north-easterly from the north-west corner of Merton Ponds Block; thence by the north-western watershed of the Woolgar River north-easterly to the Gregory Range, by that range north-westerly to a point south from the south-east corner of Bangall Block, by a line north to that corner; thence by the south and part of the west boundaries of Bangall Block, the south, west, and north boundaries of Bangall No. 1 Block, the north boundary of a camping reserve, proclaimed in *Government Gazette*, 1906, part I., page 424, by part of the west boundary of Rocky Vale Block, by part of the south-east, the south-west, and part of the north-west boundaries of Strathmore Block, part of the south-west boundary of Oswald Block, the south and south-west boundaries of Jena Block, to a point south of the confluence of the Gilbert and Einasleigh Rivers; thence by a line south three miles; and thence by a line south-west to the point of commencement.

LEASES: Gold-mining Leases and applications for Leases in force, 15; area, 249 acres. Miners' Homesteads and applications, 259; area, 485 acres (1912).

PRINCIPAL MINING CENTRES: Golden Gate, Content, True Blue, Iguana Hill, Highland Mary, Croydon King, Mountain Maid, Twelve-mile, Table Top, Golden Valley, and Stanhills Tinfield.

MINERAL STATISTICS: **Gold,** *see tables and diagrams,* Pls. 36, 46, 46A, 47; **Tin,** *see* Pls. 38, 46, 46A.

Croydon Goldfield—*continued:*

STATISTICAL NOTES:

Greatest recorded annual gold yield (1900), 48,045 fine oz., value £204,082.

Smallest recorded annual gold yield (1886), 1,514 fine oz., value £6,416.

The yields of gold from 1887 to 1896 gradually increased from 20,000 oz. to 43,000 oz., after which, for a number of years, they averaged about 32,000 oz. From 1901 to 1912 there was a gradual decline, the yield for the latter year being only 8,363 fine oz.

Total yield to end of 1912, 744,703 fine oz., value £3,163,297, equal to 4·21 per cent. of the whole gold production of the State.

MINERAL REFERENCES: **Gold** (alluvial), *see* 3183; (reef), 3476-3560; Silver, 7425, 7426; (Native), 7545-7548; Cerargyrite (1177); Lead (Cerussite), 1187-1188A; (Galena), 2698-2712; (Massicot), 6517-6521; (Minium), 6576, 6577; (Pyromorphite), 7135-7139; Copper (Chalcanthite), 1317; (Chalcotrichite), 2488; (Copper Pyrites), 2102; (Redruthite), 7254; Zinc-Blende, 8054-8061; Manganese-dioxide, 6393; Iron (Copperas), 2334; (Hematite), 4674, 4690-4693; (Iron Pyrites), 4933-4966A; (Ironstone), 5493-5504; (Limonite), 5799-5802; (Magnetite), 5968; (Marcasite), 6499; (Mispickel), 6644, 6645; (Siderite), 7403; (Vivianite), 7920; Coal, 1596, 1597; Graphite, 4573-4587; Scheelite, 7338C. *Other Minerals:* Alunogen, 4; Calcite varieties, 563-565; Chlorite, 1425, 1426; Epsomite, 2611; Felspar, 2624, 2625; Fluorspar, 2652-2654; Heulandite, 4819; Lithomarge, 5707; Mica, 6552; Rock Crystal, 7183; Serpentine, 7378; Stilbite, 7662.

GEOLOGICAL NOTE: The prevailing rocks of the district are felsite and granite, the two forming distinct belts of country, their line of contact being close to the township of Croydon. The felsites carry reefs from which a large amount of gold has been won, but it is in the granite where the richest reefs have been found, more particularly where this rock is graphitic. The gold is sometimes worth only 15s. per ounce, but its value is usually about three times this amount.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 31, 35, 48, 61, 108, 202, 212. *See under* Geol. Surv. Pub. list for titles of reports. *See also under* Govt. Min. Jour., Reports 67, 70, 89, 122. *See also* List of Maps *under* Department of Mines Publications.

WARDEN AND INSPECTOR OF MINES: Both stationed at Croydon. *See under* Wardens and Inspectors of Mines for names of the fields controlled.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

CRUSHING MILLS: Thirteen batteries (213 stamps). Several mills idle. Charges, 10s. to 12s. per ton.

BORES: *See under* Gold Bores for notes.

GENERAL INFORMATION: Consult *Pugh's Almanac, Queensland Post Office Directory, Post and Telegraph Guide.* Newspapers: *Croydon Mining News.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Croydon King Mining Centre, Croydon Goldfield, includes Croydon King, Packsaddle, Richmond, Emperor, and other reefs. *Min.Ref.* Galena, *see* 2703; Gold, 3498, 3499; Graphite, 4583; Hematite, 4692; Iron Pyrites, 4957.

—— —— Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

—— Queen No. 2 South Mine, Croydon Goldfield. *Min.Ref.* Cerargyrite, *see* 1177; Silver (native), 7545.

—— —— Reef (called also Queen of Croydon), Croydon Goldfield, includes La Reine D'or, Waratah, Miners' Right, and Black Snake Mines. *Min.Ref.* Galena, *see* 2704, 2709; Gold, 3493; Iron Pyrites, 4938; Limonite, 5800; Zinc-Blende, 8056.

—— Reef, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 4163.

Crucible Clays, *see* Kaolin, Fireclays.

Crucible Tin and Copper Mine. *Min.Ref.* Azurite, *see* 189B; Cassiterite, 892; Copper Oxide, 2047; Copper Pyrites, 2157; Malachite, 6220.

Crusader Group of Copper Mines, *includes* Crusader M.Fs. (2), Orphan M.L., Three Jack M.C., Flower M.C., Mt. Sparklet M.L., and others. *Min.Ref.* Copper (native), *see* 1985; Cuprite, 2411; Hematite, 4694; Iron Pyrites, 4967; Limonite, 5806; Magnetite, 5969; Malachite, 6164, 6165; Redruthite, 7256, 7257; Tetrahedrite, 7758.

—— M.F. (2549), Cloncurry. *Min.Ref.* Copper (native), *see* 1985; Cuprite, 2411; Hematite, 4694; Iron Pyrites, 4967; Limonite, 5806; Magnetite, 5969; Malachite, 6164; Redruthite, 7256; Tetrahedrite, 7758.

Crushing Mills in Queensland. *See under* Gold, Tin.

—— —— Charges. *See under* Mill Charges.

Cudgee Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 188, 195.

Culberry Bore. *See under* Artesian Bores. No. 185.

Culgowrie Farm, 11v, Ironpot Cr., 35 miles N. of Dalby. *Min.Ref.* Coal, *see* 1599.

Cull Paddock Sub-artesian Bore. *See under* Artesian Bores. No. 348.

Cullan's Twins P.A., Thanes Cr. Goldfield. *Min.Ref.* Gold, *see* 3864; Iron Pyrites, 5126.

Culloden Lease Bores. *See under* Artesian Bores. No. 234.

Culyer Creek Bore. *See under* Artesian Bores. No. 200.

Cumberland. Etheridge Goldfield. *Lat.*, 18° 20′ S. *Long.*, 143° 20′ E. *See maps*, Pls. 8, 9, 32. *Includes* the following reefs:—Brandy Hot, Brilliant, Cumberland, Harp of Erin, Jubilee, Mitchell, Monkland, Mystery, Peter O'Neill, Somerset, Three Jacks, Warrior, etc. *Min.Ref.* Galena, *see* 2751; Gold, 3724; Iron Pyrites, 5044.

Geological Note: The country rock is a coarse-grained granite, traversed by gold-bearing quartz reefs and an elvan dyke. The reefs are charged with Iron Pyrites, Copper Pyrites, Mispickel, Zinc Blende, and Galena, in varying quantities. *See* G.S.Q. Pub. No. 92, p. 15, etc., for notes.

—— Co.; Mitchell Dist. *See map*, Pl. 18.

—— Lead. Black Ridge, Clermont Goldfield. *Min.Ref.* Gold, *see* 3298.

—— Reef. Sandy Cr., Clermont Goldfield. *Min.Ref.* Gold, *see* 4150; Ironstone, 5594.

—— ——. Etheridge Goldfield. *Min.Ref.* Galena, *see* 2751; Gold, 3724; Iron Pyrites, 5044.

—— and Georgetown (between). Etheridge Goldfield. *Min.Ref.* Felspar Crystals, *see* 2632; Mica, 6555.

Cumkillenbar, 17 miles N.E. of Dalby. *Lat.*, 27° 6′ S.; *Long.*, 151° 23′ E. *Min.Ref.* Hyalite, *see* 7012; Lithophyses, 1395.

Cumnor Silver Lease, Silverfield. *Min.Ref.* Argentite, *see* 94; Galena, 2775; Stibnite, 7627A; Silver, 7457.

Cunnamulla (on Western line), 604 miles W. of Brisbane. *Co.* Wellington; *Dist.* Warrego. *Lat.*, 28° 04′ S.; *Long.*, 145° 40′ E.

Railway Base for Yowah and Karoit Opal Mines in the Cunnamulla Mineral Field; and Duck Cr., Sheep Station Cr., Emu Cr., and Fiery Cross Opal Mines, in the Paroo Mineral Field.

Geological Note: The rocks of Cunnamulla are Rolling Downs Formation (Lower Cretaceous) and Desert Sandstone (Upper Cretaceous), the latter containing the opal deposits, and resting unconformably in isolated patches on the former.

Cunnamulla Bores. *See under* Artesian Bores. Nos. 18, 189, 235, 237.

Cunnamulla Mineral Field.

Situation: *See maps,* Pls. 18, 19. About 35 miles N.N.W. and 65 miles W.byN. of Cunnamulla Rail. Stn. (Western line). *Cos.* Humeburn, Palmer, Bando, and Wellington. *Dist.* **Warrego.** Centre about *Lats.* 27° and 28° S.; *Longs.* 144° and 146° E.

Area: 2,165,760 acres (3,384 sq. miles).

Population: 2,971 (Census 1911).

Proclamation of Field: First (and only one) gazetted, 20th August, 1897, as follows:—Commencing on Yowah Creek at the intersection of the Cunnamulla and Thargomindah road, and bounded thence by that road W. to the W. boundary of Bingara North Block, by the west boundary of same northerly by the S. and W. boundaries of Back Dundoo, by the W. boundary of Back Dundee, by the S. and W. boundaries of Mulga South, by part of the S. and W. boundary of Mulga North, by part of the E. boundary of Bundilla; by the S. boundary of Cecil Downs easterly, by the W. and S. boundaries of Retrac, the S. and E. boundaries of Dundoo northerly, and the E. boundary of Marathon East, by the S. boundaries of Chevy and Tirga easterly, by the E. boundaries of Tirga and Boneberry northerly, by the S. boundaries of Beechel West and Beechel East easterly, and by the E. boundary of Beechel East northerly to Taroura Cr.; thence by the track from Beechel Cr. to the Paroo and Warrego Rivers easterly to the W. boundary of Tyson Block, by the W. and S. boundaries of Tyson southerly and easterly, by the W. boundary of Barbara Plains southerly, and a line continuing S. from the S.W. corner of Por. 1v, Grazing Farm 229, to the N.W. corner of Por. 1v, Bando; thence by a road running S., by the W. boundaries of Pors. 1v, Grazing Farm 106, 2v, Grazing Farm 111, and 3v, Grazing Farm 102, Par. of Bando, by the same road E. along the S. boundary of the lastnamed por.; thence by the same road S. along the W. boundaries of Por. 27v, Grazing Farm 16, to the road running west along the northern boundaries of Pors. 26v, 38v, and 39v, Tinnenburra Resumption; thence by a road running S. along the western boundaries of Pors. 39v and 25v, and along the northern boundaries of Pors. 24v and 29v, and the western boundary of Por. 29v, by the same road continuing along the western boundaries of Pors. 4v and 5v, Par. of Bowra, by the same road continuing along part of the W. and S. boundaries of the leased part of Bowra Run, along part of the W. boundary of Por. 15v, Tinnenburra Resumption, to the Cunnamulla and Thargomindah road; and thence by that road in a westerly direction to the point of commencement.

Principal Mining Centres: Koroit, Southern Cross, and Yowah Opal Fields, *which see.*

Mineral Statistics: Opal, *see tables,* Pls. 44, 46, 46a.

Statistical Note: Total value of the yield of Opal to end of 1912 is —£14,450. This is equal to 8·38 per cent. of the State's total production.

Mineral References: Opal (precious), 6954, 6963-6966.

Geological Publications: Report No. 177 (1902). *See under* Govt. Sur. Pub. List for title.

Geological Note: The rocks comprise "Desert Sandstone" (Upper Cretaceous) and Rolling Downs (Lower Cretaceous) Formations. The Opal deposits occur throughout the district, but exclusively in the Desert Sandstone. *See* G.S.Q. Pub. No. 177 *for details and map.*

Warden (acting): Stationed at Cunnamulla. Inspector of Mines: Stationed at Gympie.

Reports: Inspector's and Warden's monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Cunnavalla Opal Mine, Kyabra Opal Field. Discovered in 1888. *Min.Ref.* Opal (precious), *see* 6946b.

Cunningham's Gap, 20 miles S.W. of Boonah. *Co.* Churchill. *Dist.* Moreton. *Min.Ref.* Coal, *see* 1722a.

Cupreous Anglesite. *Syn.* of Linarite, *which see.*

Cupriferous Galena. *See* Galena.

—— Iron Pyrites. *See* Iron Pyrites.

Cuprite. *Compo.,* Oxide of Copper. *Colour,* red shades. *Streak,* red shades. Sometimes earthy. *H.* = 3·5-4; *Sp.gr.* = 5·8-6·1. *Var.* Chalcotrichite. Acicular. Cochineal-red colour. *Var.* Tile Ore—brick-red, reddish brown. Earthy. *Contents* (*max.*), Copper 88 per cent.

2377. ——. *Assoc.with* Malachite and Tetrahedrite, in quartz lode. *Loc.* Argylla Copper Mine, Argylla Cr., 40 miles W. of **Cloncurry.** *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 7 (1885).

2378. Cuprite. *Assoc.with* Native Copper, Tenorite, and Calcite. *Loc.* Dugald Mine, Dugald R. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 73 (1887).

2379. ——. *Assoc.with* Silver, Native Copper, Massicot, Copper carbonate, Antimony, and Graphite (traces) in lode, in calcite, in siliceous and talcose shales. *Loc.* Dugald Mine, Dugald R. (*ante*). *Ref.* G.S.Q. Pub. 10, p. 3 (1885).

2380. —— *Assoc.with* Native Copper, Malachite, and Limonite, in schist and gossan. Two Sports M.F. (2874), Longamundi Group, Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 288, 289 (1908).

2381. ——. *Assoc.with* Malachite and Limonite. *Loc.* Una M.L. 280, Una Group, Dugald R., 33 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Assay:* Copper = 40·2 per cent.; Silver, 1 oz. 19 dwt. per ton; Gold = trace. *Ref.* A.R., p. 116 (1907), and G.S.Q. Pub. 215, p. 277 (1908).

2382. ——. *Assoc.with* Almandine Garnet, Malachite, Asbolane, and Ironstone. *Loc.* Valley, W. of Mt. Eurie, nr. head of Dugald R., 40 miles N.byW. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

2383. ——. *Assoc.with* Native Copper slugs. *Loc.* Mt. Godkin, nr. Cameron R., 34 miles W. of Cloncurry. *Co.* Argylla (*ante*). Weight of 4 slugs: 18 cwt., 13 cwt., 6¾ cwt., respectively. *See* Pl. Q.G.M.J., vol. 9, p. 127 (1908).

2384. ——. *Assoc.with* Native Copper, in quartz. Oliver Twist M.C., Native Companion Group, Palm Tree Cr., 26½ miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 276 (1908).

2384A. ——. *Assoc.with* Malachite. *Loc.* Broken Hill Mine, Cloncurry, about 480 miles (by rail) W.byS. of Townsville. *Co.* Beaconsfield; *Dist.* Burke.

2384B. ——. *Assoc.with* Malachite, in quartz. *Loc.* Cammie M.L. (477), Eagle Hawk Group, Mt. Douglas or Pumpkin Gully, 12 miles E.N.E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 153, p. 7 (1900), and P. 215, p. 238 (1908).

2385. ——. *Assoc.with* Copper Pyrites, Azurite, and Malachite. *Loc.* Contra Copper Lode, ¼-mile S.W. of Gt. Australia Mine, 1 mile S.E. of Cloncurry Township. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 10, p. 4 (1885)

2386. ——. *Assoc.with* Native Copper, Copper Pyrites, Tetrahedrite, Malachite, and Iron Pyrites, in brown quartzite, etc. *Loc.* Gt. Australia M.F., 1 mile S.E. of Cloncurry Township (*ante*). *Ref.* G.S.Q. Pubs. 10, p. 34 (1885), 153, p. 3 (1900), and 215, pp. 242-250 (1908).

2387. ——. *Assoc.with* Native Copper, Malachite, and Limonite, in quartzite, schist, and gossan. *Loc.* M.F. (14), 1½ miles N.N.E. of Cloncurry, Gt. Australian Group. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 251, 252 (1908).

2388. ——. *Assoc.with* Tenorite, Malachite, and Azurite, in ferruginous quartzite. *Loc.* Ma Foi, M.L. (508), 1½ mile N.E. of Cloncurry, Gt. Australian Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 253 (1908)

2389. ——. *Assoc.with* Garnet, Asbolane, Manganese-dioxide, and Malachite. *Loc.* Mountain Home Mine, Mt. Norma, 17 miles S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 15 (1885).

2390. ——. *Assoc.with* Tetrahedrite, Malachite, and Chalcostibite, in hematite. *Loc.* Copper Lode, Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 10, p. 4 (1885), and P.R.S.Q., vol. 4, p. 54 (1887).

2391. ——. *Assoc.with* Gold, Native Copper, Malachite, and Azurite. *Loc.* Homeward Bound M.C. (331), Homeward Bound Group, Pumpkin Gully (*ante*). *Ref.* G.S.Q. Pubs. 10, p. 4 (1883), and 215, pp. 233, 234 1908).

2392. ——. *Assoc.with* Redruthite, Bornite, Copper carbonate, Chrysocolla, and Iron stone. *Loc.* Mt. Douglas Copper Leases, Pumpkin Gully (*ante*). *Ref.* G.S.Q. Pub. 153, pp. 6, 7 (1900).

2392A. ——. *Assoc.with* Redruthite, Tile Ore, Malachite, Chrysocolla, and Limonite, in quartz and quartzite. *Loc.* Rocklands Group, between Butcher and Morris Crs., 9 miles W. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 258-265 (1908).

2392B. ——. *Assoc.with* Tile Ore, Redruthite, Malachite, and Limonite, in gossan and quartzite. Chum M.C. (329), Serpent Hill Group, Morris Cr., 4½ to 5½ miles W.S.W. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 256 (1908).

2392C. ——. *Assoc.with* Tile Ore, Malachite, and Limonite, in lode. *Loc.* Carlton Hills Run, about 78 miles N.W.byW. of Cloncurry. *Co.* Brahe; *Dist.* Burke. *Ref.* A.R., p. 269 (1910).

2393. ——. *Assoc.with* Malachite. *Loc.* Cloncurry Hills, between Mackinlay and Cloncurry Rs., about 20 miles S.E. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Assay:* Gold = 1 dwt. 14 gr. per ton; Copper = 39·1 per cent. *Ref.* A.R., p. 100 (1907).

2394. ——. *Assoc.with* Tetrahedrite, Malachite, and Stibnite, in quartz. Rainbow M.L. (2454), Boomerang Group, Cone Cr., trib. of Duck Cr., 2½ miles N.byE. of Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 10, p. 5 (1885), and P. 215, p. 102 (1908).

2395. ——. *Assoc.with* Copper Pyrites, Tetrahedrite, Malachite, and Antimony. *Loc.* Rainbow Copper Lode, Cone Cr., trib. of Duck Cr., 24 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 56 (1887).

2396. ——. *Assoc.with* Copper carbonate, in quartz lode in chloritic slate. *Loc.* Cone Cr., trib. of Duck Cr. (*ante*). *Ref.* G.S.Q. Pub. 10, p. 5 (1885).

2397. ——. *Assoc.with* Redruthite, Tile Ore, Malachite, and Limonite, in quartz and schist. *Loc.* Butterfly M.L. (496), Daisy Group, 1½ mile N.N.W. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 109, 110 (1908).

2398. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Tile Ore, Malachite, Limonite, Calcite, Actinolite, Chlorite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

2399. ——. *Assoc.with* Redruthite, Malachite, and Limonite, in slate and gossan. *Loc.* Block (15), (M.Ls. 246 and 409), Hampden Group, 40 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 60, 61 (1908).

2400. ——. *Assoc.with* Copper Pyrites, Tenorite, Redruthite, Malachite, Chrysocolla. Iron Pyrites, and Kaolin, in slates, gossan, and diorite. *Loc.* Hampden M.Ls. (244, 245, etc.), Hampden Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 49-60 (1908).

2401. ——. *Assoc.with* Redruthite, in kaolin lode. *Loc.* Hampden Copper Mine, Hampden Group (*ante*). *Copper Yield:* First grade = 40 per cent.; second = 13 per cent.; third = 6½ per cent. of Copper. *Ref.* G.S.Q. Pub. 153, p. 4, (1900).

2401A.——. *Assoc.with* Malachite. *Loc.* Mt. Babunga, Hampden-Cloncurry Copper Mines Co., 5 miles S.W. of Hampden Mine, 45 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke.

2402. ——. *Assoc.with* Copper Pyrites and Ironstone. *Loc.* Mascotte M.C. (319), Hilda Group, Slaty Cr., 20 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Assay: See* No. 2087. *Ref.* A.R., p. 118 (1907).

2403. ——. *Assoc.with* Tile Ore, Malachite, and Limonite, in quartz. *Loc.* Adelaide M.L. (549), Just-in-Time Group, 1¼ mile S. of Malbon R., 30 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 85, 86 (1908).

2404. ——. *Assoc.with* Malachite, Tetrahedrite, in ironstone. *Loc.* Malbon M.F. 2548, Just-in-Time Group (*ante*). *Ref.* A.R., 1907, p 117.

2405. ——. *Assoc.with* Redruthite, Tile Ore, Malachite, and Limonite, in quartzite and slate. *Loc.* Malbon M.F. (2548), Just-in-Time Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 79-81 (1908).

2406. ——. *Assoc.with* Native Copper, Redruthite, Malachite, Cyanochalcite (?), Limonite, Calcite, and Ferro-calcite, in granular limestone. *Loc.* Dandy P.A. (297), McPhail Group, 2 miles S. of Florence R., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 76, 77 (1908).

2407. ——. *Assoc.with* Copper Pyrites, Azurite, and Malachite, in lode in porphyry. *Loc.* Mt. Devoncourt M.L. (550), Monitor Group, Cloncurry R., 44 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 66-68 (1908).

2407A.——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, and Molybdenite, in lode formation. *Loc.* May Graham P.A., 4 miles W. of Soldier's Cap, about 33 miles (by road) S.E. of Cloncurry, Mt. Wheeler Group. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 225 (1908).

2408. ——. *Assoc.with* Redruthite, Malachite, and Limonite, in schist and quartz. *Loc.* Ready Rhino Copper M. Lease (320), Ready Rhino Group, Mt. Start, nr. Cone and Duck Crs., 23½ miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 93-95 (1908).

2409. ——. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in chloritic schist. *Loc.* Mt. Minde Copper M.F. (2658), Timberoo Group, Friedman Cr., br. of Slaty Cr., 18 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 170-172 (1908).

2410. Cuprite. *Assoc.with* Native Copper, Copper Pyrites, Malachite, Chrysocolla, and Limonite, in gossany quartz and calcareous sinter. *Loc.* Boundary M.L. (582), Bull Cr. Group, Coolullah Run, 74 miles N.N.W.. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 345-347 (1908).

2411. ——. *Assoc.with* Native Copper, Tetrahedrite, Redruthite, Malachite, Iron Pyrites, Magnetite, Hematite, and Limonite, in quartz and schist. *Loc.* Crusader M.F. (2549), Crusader Group, Coolullah Run, E. of Coppermine Cr., 68½ miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pubs. 10, p. 8 (1885), and 215, pp. 334, 335 (1908).

2411A. ——. *Assoc.with* Malachite, in kaolin. Widow M.C., W. bank of Soda Cr., Dobbyn Group, Coolullah, 70½ miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, p. 342 (1908).

2411B. ——. *Assoc.with* Native Copper, in siliceous ironstone. *Loc.* Jessie's Dream M.L. (397), Jessie's Dream Group, Six-mile Cr., Leichhardt R., 60 miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, p. 314 (1908).

2412. ——. *Assoc.with* Native Copper, Chrysocolla, and Limonite, in schist and quartzite. *Loc.* Little Wonder M.L. (258), (Mighty Atom Group), Six-mile Cr., Leichhardt R., 63 miles N.W.byN. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 310, 311 (1908).

2412A. —— *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, and Limonite, in slate, schist, and gossan. *Loc.* Mt. Millicent M.L. (663), (Mighty Atom Group), Six-mile Cr., Leichhardt R., 60 miles N.W.byN. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 310, 311 (1908).

2413. ——. *Assoc.with* Native Copper, Copper Pyrites, Tile Ore, Malachite, and Limonite, in schist, slate, and gossan. *Loc.* Mt. Cuthbert M.L. (107), Mt. Cuthbert Group, Six-mile Cr., Leichhardt R., 19 miles S.W. of Coolullah H.S., 63 miles N.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 315-318 (1908).

2414. ——. *Assoc.with* Copper carbonate and Ironstone, in quartz lode in schist. *Loc.* Mt. Cuthbert, Mt. Cuthbert Group (*ante*). *Ref.* G.S.Q. Pub. 153, p. 9 (1900).

2415. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Chrysocolla, and Limonite, in schist, gossan, and quartz. *Loc.* Mt. Cuthbert No. 1 N. M.L. (381), Mt. Cuthbert Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 318-321 (1908).

2416. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, Tenorite, Malachite, Iron Pyrites, and Limonite, in slate and gossan. *Loc.* Mt. Metallic R.C. (310), Mt. Metallic Group, Prospector Cr., Leichhardt R., 52 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Assay: See* No. 2115. *Ref.* G.S.Q. Pub. 215, pp. 295-297 (1908).

For further Cloncurry references, *see* Nos. 2447-2454.

2417. ——. *Assoc.with* Native Copper and Malachite. *Loc.* Caledonia Mine, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M.

2418. ——. *Assoc.with* Tetrahedrite, in lode. *Loc.* Mt. Perry Copper Lode, Mt. Perry (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

2419. ——. *Assoc.with* Gold, Copper Pyrites, Chalcotrichite, Tile Ore, Iron Pyrites, Zinc-Blende, and Calcite. *Loc.* Mt. Perry Mine, Mt. Perry (*ante*). *Ref.* G.S.M.

2420. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Tenorite, Malachite, Iron Pyrites, Pyrrhotite, Mispickel, Hematite, Bismuthinite, Zinc-Blende, and Calcite, in quartz reef. *Loc.* Commonwealth Mine, nr. Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah br. line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), and 207, pp. 14-19 (1907).

2421. ——. *Assoc.with* Gold, Stibnite, and Hematite, in quartz. *Loc.* Lady Augusta Mine, Eidsvold Goldfield, 37 miles W.S.W. of Mt. Perry, 80 miles W.S.W. of Bundaberg. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 102, p. 3, (1895), and 160, p. 10 (1901).

2422. ——. *Assoc.with* Azurite and Malachite, in felspathic rock. *Loc.* Marshall Block Lease, Mt. Cannindah, Cabbage Tree Cr., nr. head of Splinter Cr., 13 miles S.W.byS. of Many Peaks Rail. Stn. (Boyne Valley line), 71 miles (by rail and road) S. of Gladstone. *Co.* Yarrol (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 113, p. 7 (1896).

2423. ——. *Assoc.with* Tenorite, Azurite, and Malachite, in dyke rock. *Loc.* Monument Block Lease, Mt. Cannindah (*ante*). *Ref.* G.S.Q. Pub. 113, p. 8 (1896).

2424. ——. *Assoc.with* Gold, Silver, Native Copper, Tenorite, Malachite, and Azurite, in dyke rock. *Loc.* Mt. Cannindah Mine, Mt. Cannindah (*ante*). *Ref.* (and *Assays*) G.S.Q. Pubs. 113, pp. 6, 7 (1896), 143, p. 4 (1899), and G.S.M.

2425. ——. *Assoc.with* Gold, Tetrahedrite, Malachite, Azurite, Chalcanthite, and Ironstone, in lodes in gneiss and schist. *Loc.* Arbouin Mines, between Nondah Cr. and Walsh R., 18 miles W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 134, pp. 13, 14 (1898).

2426. ——. *Assoc.with* Tile Ore and Malachite, in lode stuff. *Loc.* The Granite, Maytown, 36 miles S. of Laura Rail. Stn. (Cooktown line), 103 miles (by rail and road) S.byW. of Cooktown. *Co.* Chelmsford; *Dist.* Cook. *Ref.* O.R.

2427. ——. *Assoc.with* Malachite, in lode. *Loc.* 3 miles N. of Palmerville, 40 miles S.W.byS. of Laura Rail. Stn. (Cooktown line), 107 miles (by rail and road) S.W.byW. of Cooktown. *Co.* Chelmsford (*ante*).

2427A.——. *Assoc.with* Copper Pyrites, Malachite, and Azurite, in lode. *Loc.* Daintree Copper Mine, 38 miles S.E. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Copperfield; *Dist.* Cook. *Ref.* E.O.M.

2428. ——. *Assoc.with* Wolfram, Scheelite, Azurite, and Malachite, in defined quartz lodes in slates. *Loc.* Parada Mine, 1 mile N. of Parada Rail. Stn. (Chillagoe line), 65 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

2429. ——. *Assoc.with* Tile Ore, Malachite, Azurite, and Red Ochre, in quartzites, greywackes, and micaceous shales. *Loc.* Shaughran Copper Mine, Watsonville, 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

2430. ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, Iron Pyrites, Mispickel, Cassiterite, Stannine, Wolfram, Ironstone, Fluorspar, and Chlorite. *Loc.* Stewart's T Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 26 (1883), and P. 119, p. 15 (1897).

2431. ——. *Assoc.with* Copper Pyrites, Bornite, Tile Ore, Tetrahedrite, Tenorite, Atacamite, Malachite, Iron Pyrites, and Hematite, in lode of felspar and quartz. *Loc.* Ruddygore Copper Mine, Arbinjoe Cr., 2 miles N.E. of Chillagoe, 141 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 69, p. 7 (1891), and 134, pp. 10, 11 (1898).

2432. ——. *Assoc.with* Malachite. *Loc.* Atherton Copper Lease (34), Otho Camp, between Cathedral Range and Arbinjoe Cr., 4 miles N.W. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 8 (1891), and 134, p. 9 (1898).

2433. ——. *Assoc.with* Malachite. *Loc.* Emuford, Emu Cr., br. of Walsh R., 11 miles S.E. of Petford Rail Stn. (Chillagoe line), Walsh and Tinaroo Mineral Field (*ante*). *Ref.* B.D.

2434. ——. *Assoc.with* Tenorite, Tile Ore, Azurite, Malachite, Chrysocolla, Hematite, and Magnetite, in garnet rock. *Loc.* Boomerang Copper Mine, Marble Cr., 1 mile W. of Calcifer Rail Stn. (Chillagoe line), 133 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 8 (1891), and 119, p. 36 (1897), and G.S.M.

2435. ——. *Assoc.with* Tetrahedrite, Malachite, Minium, and Hematite, in lode. *Loc.* Mollie Lease, Marble Cr., Calcifer Rail. Stn. (Chillagoe line) (*ante*). *Assays:* (1) Copper = 30 per cent.; Silver = 20 to 30 oz. per ton. (2) Copper = 10 to 15 per cent.; Silver = 20 to 40 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 8 (1891).

2436. ——. Paisley Mine, Muldiva, 7 miles W.S.W. of Almaden Rail Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 51 (1900).

2437. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Azurite, Chrysocolla, Fluorspar, and Garnet. *Loc.* Dorothy Copper Mine, Mungana, 149 miles (by rail) W.S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 2 (1891), and P.R.S.Q., vol. 15, p. 51 (1900).

2438. ——. *Assoc.with* Galena, Cerussite, Malachite, and Ironstone, in clay and quartz. *Loc.* Girofla Mine, Opera Cr., Mungana (*ante*). *Ref.* G.S.Q. Pub. 69, p. 3 (1891), and B.D.

2439. Cuprite. *Assoc.with* Native Copper, Tetrahedrite, Malachite, Azurite, Manganese-dioxide, Hematite, and Selenite, in lode. *Loc.* Griffith Mine, Julia Cr., 2 miles S.E. of Mungana (*ante*). *Ref.* G.S.M., G.S.Q., Pubs. 69, p. 5 (1891), and 134, p. 11 (1898).

2440. ——. In brecciated lode. *Loc.* Lady Jane Mine, Mungana (*ante*). *Ref.* G.S.M.

2441. ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, Galena, Cerussite, Minium, Zinc-Blende, Hematite, and Garnet. *Loc.* Penzance Lease, Redcap Cr., 3 miles N.E. of Mungana Rail Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.P.Q. Pubs. 69, p. 6 (1891), and 134, p. 11 (1898).

2442. ——. *Assoc.with* Gold, Redruthite, and Copper carbonate, in lode. *Loc.* Percy R., 5 miles above junction with Gilbert R., 41 miles S. of Charleston Rail. Stn., Etheridge line. *Co.* Victor; *Dist.* Cook. *Assays*: Copper = 59 and 54 per cent. *Ref.* G.S.Q. Pub. 151, p. 13 (1900).

2443. ——. *Assoc.with* Malachite, in slate. *Loc.* Mitchell R., 20 miles from O.K. Copper Mine, 60 miles N.N.W. of Mungana, Walsh and Tinaroo Mineral Fields. *Co.* Wrotham; *Dist.* Cook. *Ref.* O.R.

2443A. ——. *Assoc.with* Tetrahedrite, Azurite, Malachite, Cerussite, and Ironstone, in lodes. *Loc.* Tartana Hill, Bowler Cr., Ashtonville, 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 15, 16 (1898).

——. *See further* Walsh and Tinaroo references *under* District Kennedy North. Nos. 2455-2457.

2444. ——. *Assoc.with* Copper Pyrites, Azurite, Malachite, and Zinc-Blende, in quartz lode. *Loc.* Sel. 24, nr. Sundown Cr., Severn R., 11 miles W.S.W. of Ballandean, 25 miles (by rail and road) S.W. of Stanthorpe (on main line). *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

2445. ——. Inglewood, 73 miles (by rail) W.byS. of Warwick. *Co.* Bentinck (*ante*). *Ref.* O.R.

2446. ——. *Assoc.with* Gold, Pyrargyrite, Iron Pyrites, Copper Pyrites, Tile Ore, Azurite, Malachite, Galena, Cerussite, Zinc-Blende, Smithsonite, Ironstone, and Calcite. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Refs.* G.S.Q. Pub. 120 (1898), and P. 191 (1904).

2447. ——. *Assoc.with* Malachite, in quartz. *Loc.* Duchess M.L. (275), Duchess Group, Burke R., 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Assay*: Gold = trace; Silver = 1 oz. 2 dwt. per ton; Copper = 31·2 per cent. *Ref.* A.R., p. 116 (1907).

2448. ——. *Assoc.with* Malachite, Azurite, and Limonite, in quartz. *Loc.* Ivanhoe M.L. (277), Duchess Group, Burke R. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 23, 24 (1908).

2449. ——. *Assoc.with* Malachite and Azurite. *Loc.* Monastery M.L. (467), 79 miles S.W. of Cloncurry, Mt. Birnie Group, Burke R. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* A.R., p. 117 (1907).

2450. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Chrysocolla, Iron Pyrites, and Limonite, in hornblende schist. *Loc.* Mt. Birnie M.L. (686, etc.,), 74½ miles S.S.W. of Cloncurry, Mt. Birnie Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 367 (1908).

2451. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, Malachite, Atacamite, Limonite, and Calcite, in quartz and chloritic schist. *Loc.* Blue Jacket M.L. (632), Mt. Hope Group, Wills R., 53½ miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 43, 44 (1908).

2451A. ——. *Assoc.with* Malachite and Limonite, in quartz and quartzite. *Loc.* Mt. Hope M.L. (366), Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 38 (1908).

2452. ——. *Assoc.with* Malachite and Azurite, in schist, quartz, and kaolin. *Loc.* Horse Cr. M.L. (220, etc.), Horse Cr. Group, 50 miles S.byW. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North; *Ref.* G.S.Q. Pub. 215, pp. 15, 16 (1908).

2453. ——. *Assoc.with* Gold, Tile Ore, Tenorite, Malachite, Atacamite, Chalcanthite, Iron Pyrites, Limonite, Calcite, and Chalcedony, in kaolinised slate and gossan. *Loc.* Mt. Elliott Copper R.C. (No. 3), Mt. Elliott Group, Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 3-12 (1908).

2454. ——. *Assoc.with* Tenorite and Malachite, in quartz. *Loc.* Mt. Elliott, Maggie's Cr. (*ante*). *Assay*: Copper, 28·82 per cent.; Gold, 1 dwt. 5 gr.; and Silver, 13 dwt. per ton. *Ref.* A.R., p. 118 (1907).

For other Cloncurry references, *see* Nos. 2377-2416.

2455. ——. *Assoc.with* Cassiterite, in argillaceous chlorite. *Loc.* Gt. Eastern Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Field. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 11 (1883).

2456. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Bornite, Tenorite, Azurite, Malachite, Chalcanthite, Mispickel, Zinc-Blende, Iron Pyrites, Hematite, Magnetite, Cerussite, and Minium, in quartz lodes, in quartzite and porphyry. *Loc.* Mt. Garnet Mines, Return Cr., 136 miles (by rail) S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

2457. ——. *Assoc.with* Malachite, Azurite, and Wolfram, in quartz lode. *Loc.* Round Mt., W. of Coolgarra, 9 miles N.N.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

——. *See further* Walsh and Tinaroo references *under* District Cook. Nos. 2428-2443A.

2457A. ——. *Assoc.with* Malachite, in quartz. *Loc.* Haydin Show, Wyandotte, 48 miles S.E. of Mt. Surprise Rail. Stn. (Etheridge line). *Co.* Gunnawarra; *Dist.* Kennedy North. *Ref.* A.R., p. 178 (1909).

2458. ——. *Assoc.with* Gold, Malachite and Hematite. *Loc.* Copper King Mine, 1½ mile from Lamington Mine, 41¼ miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* A.R., 1906, p. 62.

2459. ——. *Assoc.with* Malachite and Hematite. *Loc.* Mt. Cavanagh, Mare's Nest Cr., Normanby Road, 44 miles S.S.E. of Bowen. *Co.* Herbert (*ante*). *Assays*: (1) Gold = 19 gr. per ton; Silver = 5 dwt. per ton; Copper = 11·8 per cent. (2) Gold = trace; Silver = 2 oz. 11 dwt. per ton; Copper = 11·6 per cent. *Ref.* A.R., 1906, p. 60.

2460. ——. *Assoc.with* Redruthite and Copper carbonate, in garnet, quartz, and kaolin. *Loc.* Day Dawn Lease (170), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Assay*: Gold, trace; Silver, 265 oz. per ton; Copper, 21·6 per cent. *Ref.* G.S.Q. Pub. 82, p. 4 (1892).

2461. ——. *Assoc.with* Azurite, Malachite, and Limonite. *Loc.* Kallanda, Kangaroo Hills Mineral Field (*ante*). *Assay*: Gold = 19 gr.; Silver = 4 dwt. 19 gr. per ton; Copper = 26·5 per cent. *Ref.* A.R., p. 106 (1907).

2462. ——. *Assoc.with* Copper (native), Copper Pyrites, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Manganese-dioxide, Zinc-Blende, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

2463. ——. *Assoc.with* Copper Pyrites, Bornite, Tenorite, Copper carbonate, Iron Pyrites, Ironstone, Galena, and Zinc-Blende, in lode. *Loc.* Mt. Thekla Copper and Silver Mines, Kangaroo Hills Mineral Field (*ante*). *Assay*: Silver = 26 oz. 12 dwt. per ton; Copper = 22 per cent. *Ref.* G.S.Q. Pub. 167, p. 7 (1901).

2464. ——. *Assoc.with* Copper Pyrites, Bornite, Native Silver, Galena, and Copper carbonate, in lode. *Loc.* True Blue Lease (161), Kangaroo Hills Mineral Field (*ante*). *Assays*: *See* No. 7557. *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

2465. ——. *Assoc.with* Malachite and Azurite. *Loc.* Kennedy Copper Mine, Sandy Cr., br. of Burdekin R., 50 miles W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* O.R.

2466. ——. *Assoc.with* Tenorite and Azurite, in ferruginous lode. *Loc.* Kennedy Copper Mine, Sandy Cr., trib. of Burdekin R. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 57 (1887).

2467. ——. *Assoc.with* Malachite. *Loc.* Lady Mary Mine, Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* O.R.

2468. ——. *Assoc.with* Gold, Copper Pyrites, Galena, Bismuth, Bismuthinite, Bismite, Manganese-dioxide, Hematite, and Ironstone, in lode. *Loc.* Daisy Bismuth Mine, 3 miles E. of Eukalunda, Sellheim Mineral Field (*ante*). *Assay*: 33·76 per cent. *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

2469. Cuprite. *Assoc.with* Azurite and Malachite, in serpentinous slate. *Loc.* Peak Downs Copper Mine, Copperfield, 4 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* P.R.S.Q., vol. 4, p. 77 (1887).

2470. ——. *Assoc.with* Malachite and Azurite, in quartz lode. *Loc.* Seven-mile Diggings, 7 miles S.E. of Nanango, 40 miles N.N.W. of Kannangur Rail. Stn. (Brisbane-Valley line), 123 miles (by rail and road) N.W.byN. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 29, p. 2 (1886).

2471. ——. Moreton Is., 41 miles N.N.E. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* P.R.S.Q., vol. 4, p. 56 (1887).

2472. ——. *Assoc. with* Native Copper, Copper Pyrites, Tile Ore, Malachite, Azurite, Iron Pyrites, Hematite, Limonite, Magnetite, and Calcite, in serpentine. *Loc.* Many Peaks Copper Mine, 58 miles (by rail) S. of Gladstone (Boyne-Valley line). *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pubs. 150, p. 8 (1900), and 194, p. 28 (1904).

2473. ——. *Assoc.with* Copper Pyrites, Tenorite, Bornite, Azurite, Malachite, Galena, Zinc-Blende, Hematite, Magnetite, Garnet, Chlorite, and Calcite. *Loc.* Glassford Cr. Copper Mines, Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn. (N. Coast line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 150, pp. 5-7 (1900), and 194, p. 28 (1904).

2473A.——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Bornite, Tenorite, Azurite, Malachite, and Ironstone, in crystalline limestone. *Loc.* Mt. Hector Copper Mine, E. side of Dawes Range, about 12 miles W.N.W. of Many Peaks Rail. Stn., 70 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* Q.G.M.J., vol. 4, pp. 174-177 (1903).

2474. ——. *Assoc.with* Azurite and Malachite, in quartz lode. *Loc.* 2 miles W. of Old Diggings, Raglan Goldfield, 6 miles S. of Raglan Rail. Stn. (North Coast line), 40 miles (by rail and road) W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

2475. ——. *Assoc.with* Azurite and Malachite. *Loc.* Iveragh Copper Lode, Iveragh Cr., trib. of Boyne R., 20 miles of Gladstone. *Co.* Flinders; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

2476. ——. *Assoc.with* Chrysocolla and Asbestos, in decomposed rock. *Loc.* Cabbage Tree Cr., Princhester Run, 12 miles from Maryborough, 44 miles N.W. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Assay:* Gold = trace, Silver = 1 oz. per ton, Copper = 6·6 per cent. *Ref.* A.R., 1907, p. 85.

2477. ——. *Assoc.with* Silver, Cerussite, Tenorite, Iron Pyrites, Zinc-Blende, and Barytes, in serpentinous shales. *Loc.* Mt. Warminster, about 3 miles W.byN. of Tungamull Rail. Stn., 21 miles (by rail and road) N.N.E. of Rockhampton (Emu Park line), Cawarral Goldfield. *Co.* Livingstone. *Dist.* Port Curtis. *Ref.* B.D.

2478. ——. *Assoc.with* Native Copper, Malachite, and Azurite, in epidote rock. *Loc.* Copper Deposits, Clairview, 12 miles N. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 141, p. 4 (1898).

2478A.——. *Assoc.with* Native Copper, Telluride ore, and Ironstone, in schist. *Loc.* Stannage Point, 37 miles E.N.E. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* B.D.

2479. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Azurite. *Loc.* Stevens Copper Lode, Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 9 (1885).

2479A.——. *Assoc.with* Copper Pyrites, Malachite, Azurite, Iron Pyrites, Hematite, Magnetite, and Limonite, in gossan lodes. *Loc.* M.L. (262), Kroombit Copper Mines, 4¼ miles E.S.E. of Kroombit Head Stn., 56 miles S.S.W. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* Q.G.M.J., vol. 7, p. 98 (1906).

2480. ——. *Assoc.with* Gold, Silver, Native Copper, Copper Pyrites, Redruthite, Iron Pyrites, Molybdenite, Azurite, Malachite, Ironstone, and Galena, in granite, breccia, and sandstone. *Loc.* Moonmera Mines, nr. Moonmera Rail. Stn. (Mt. Morgan Br. line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 195, p. 22 (1904).

2481. ——. *Assoc.with* Copper Pyrites, Redruthite, Tenorite, Azurite, Malachite, Iron Pyrites, Hematite, and Limonite, in lodes in syenitic granite. *Loc.* Calgoa Copper Lodes, Calgoa Cr., Thunder Cr., 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 207, pp. 5-11 (1907), and G.S.M.

2482. ——. *Assoc.with* Azurite and Malachite. *Loc.* Luge-e-nor Lode, Calgoa Copper Mines, Thunder Cr., Calgoa Cr. (*ante*). *Ref.* B.D.

2483. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Malachite, Bismuthinite, Magnetite, and Limonite, in lode outcrop. *Loc.* Kaboonga Mine, Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 125, p. 36 (1897).

2484. —— *Assoc.with* Copper carbonate, in quartz reef. *Loc.* S. of Mackay's Store, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 4 (1886).

2485. ——. *Assoc.with* Tetrahedrite, Malachite, Azurite, and Hematite. *Loc.* White Rocks Copper Lease, Marodian Goldfield, 8 miles N. of Kilkivan Rail. Stn., 56 miles (by rail and road) N.W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 179, p. 11 (1902).

2486. ——. *Assoc.with* Copper Pyrites, Tile Ore, Redruthite, Malachite, and Azurite, in quartz. *Loc.* Teebar Copper Lode, Munna Cr., nr. Clifton Stn., 2 miles S. of Boompa Rail. Stn. (Gayndah Br. line). *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 7 (1890), and G.S.M.

2487. ——. *Assoc.with* Redruthite. *Loc.* Warirata Road, 20 miles E.N.E. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.M.

——. *See also under* Copper Oxides.

2488. —— **Chalcotrichite** (*var.*). *Assoc.with* Gold, Iron Pyrites, Redruthite, Galena, Cerussite, in cavities in ironstone and quartz. *Loc.* Mountain Maid Reef, 2¾ miles N.N.E. of Croydon Rail. Stn., 94 miles (by rail and road) S.E. of Normanton. *Co.* Surrey; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 32, p. 10 (1887).

2489. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Cuprite, Tile Ore, Zinc-Blende, and Calcite. *Loc.* Mt. Perry Copper Mine, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M.

2490. —— ——. In dolerite. *Loc.* Mt. Warminster Mine, nr. Warwinster Rail. Stn. (Cawarral Br.), 21 miles (by rail and road) N.N.E. of Rockhampton. *Co.* Livingstone; *Dist.*. **Port Curtis.** *Ref.* B.D.

2491. —— ——. *Loc.* Rosewood Goldfield, 32 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* Q.M.

2492. —— **Tile Ore** (*var.*). *Assoc.with* Malachite and Limonite, in slate, gossan, and quartz. *Loc.* Lady Clayre M.L. (279), Lady Clayre Group, Dugald R., 36½ miles N.W. of **Cloncurry.** *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 279-281 (1908).

2493. —— —— ——. *Assoc.with* Copper Pyrites, Azurite, Malachite, and Limonite, in mica-schist, quartzite, and gossan. *Loc.* Magnet M.L. (450), Longamundi Group, Dugald R., between 34 and 39 miles N.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 284-286 (1908).

2493A. —— —— ——. *Assoc.with* Redruthite, Cuprite, Chrysocolla, Malachite, and Limonite, in quartz and quartzite. *Loc.* Rocklands Group of Copper Mines, between Butcher and Morris Crs., 9 miles W. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 258-265 (1908).

2493B. —— —— ——. *Assoc.with* Redruthite, Cuprite, Malachite, and Limonite, in gossan and quartzite. *Loc.* Chum M.C. (329), Serpent Hill Group, Morris Cr., 4½ to 5½ miles W.S.W. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 256 (1908).

2493C. —— —— ——. *Assoc.with* Bornite, Redruthite, and Iron Pyrites, in quartz. *Loc.* Monakoff M.F. (15), Monakoff Group, Pumpkin Gully, 13½ miles E.N.E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 239 (1908).

2493D. —— —— ——. *Assoc.with* Cuprite, Malachite, and Limonite, in lode. *Loc.* Carlton Hills Run, 78 miles N.W.byW. of Cloncurry. *Co.* Brahe; *Dist.* Burke. *Ref.* A.R., p. 269 (1910).

2494. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, and Limonite, in slate (?). *Loc.* Eclipse M.L. (571), Eclipse Group, E. of Dromedary Range, N.W. of Donaldson, 68 miles N.byW. of Cloncurry. *Co.* Granada; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 355, 356 (1908).

2495. —— —— ——. *Assoc.with* Redruthite, Malachite, and Actinolite, in ironstone. *Loc.* Wanderer M.L. (622), Eclipse Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 357 (1908).

2496. —— —— ——. *Assoc.with* Malachite and Chrysocolla, in gossan, schist, and quartz. *Loc.* Alice M.L. (717), Alice Group, Duck Cr., 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 162-164 (1908).

2497. —— —— ——. *Assoc.with* Malachite, in schist and quartz. *Loc.* Deadlock M.L. (542), Alice Group, Duck Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 164, 165 (1908).

2498. Cuprite (Tile Ore). *Assoc.with* Copper Pyrites, Redruthite, Malachite, Chrysocolla, Hematite, Limonite, and Turgite, in quartz, calcite, and gossan. *Loc.* Belfast M.L. (303), Belfast Group, 2 miles N.N.E. of Mt. Start, 21 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Assay: See* No. 2071. *Ref.* G.S.Q. Pub. 215, pp. 120-122 (1908).

2499. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Chrysocolla, Hematite, and Limonite, in quartz and ferro-calcite. *Loc.* Policeman M.C. (206), Boomerang Group, Cone Cr., 23 miles S.S.W of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 100, 101 (1908).

2500. —— —— ——. *Assoc.with* Copper Pyrites, Malachite, and Azurite, in gossan, quartz, and schist. *Loc.* Celestial Extd. M.C. (195), 2 miles S.S.W. of Mt. Start, Chinaman Group, 23½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 148, 149 (1908).

2501. —— —— ——. *Assoc.with* Malachite and Chrysocolla, in quartz and schist. *Loc.* Speculation M.C. (198), nr. Mt. Start, Chinaman Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 150-152 (1908).

2502. —— —— ——. *Assoc.with* Redruthite and Malachite, in ferruginous quartz and quartzite. *Loc.* Columbiad M.L. (500), Columbiad Group, Duck Cr., 1¼ mile S.W. of Mt. Start, 24½ miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 141, 142 (1908).

2502A. —— —— ——. *Assoc.with* Redruthite and Malachite, in ferruginous quartz and quartzite. *Loc.* Columbiad M.L. (500), Columbiad Group, Duck Cr., 1¼ mile S.W. of Mt. Start, 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 141, 142 (1908).

2503. —— —— ——. *Assoc.with* Redruthite, Cuprite, Malachite, and Limonite, in quartz and schist. *Loc.* Butterfly M.L. (496), Daisy Group, Duck Cr., nr. Mt. Start, 22 miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 109, 110 (1908).

2504. —— —— ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Cuprite, Malachite, Limonite, Calcite, Actinolite, Chlorite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group, Duck Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

2505. —— —— ——. *Assoc.with* Redruthite, Malachite, and Limonite, in chloritic schist and quartz. *Loc.* Balfour Extd. M.C. (257), Diagonal Group, Duck Cr., 22½ miles S.S.W. of Cloncurry (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 215, pp. 138, 139 (1908).

2506. —— —— ——. *Assoc.with* Redruthite and Malachite, in chloritic schist and quartz. *Loc.* Diagonal M.F. (2457), Diagonal Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 135, 136 (1908).

2507. —— —— ——. *Assoc.with* Gold, Copper Pyrites, Redruthite, Azurite, Malachite, and Limonite, in chloritic schist. *Loc.* Pioneer Copper Lease (229), Diagonal Group (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 215, pp. 132-135 (1908).

2508. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite, in schist and quartz. *Loc.* Prospector M.C. (182), Diagonal Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 136-138 (1908).

2509. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Azurite, and Chrysocolla, in gossan, quartz, and quartzite. *Loc.* Captain M.L. (—), Eva Group, Duck Cr., 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 158, 159 (1908).

2510. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Chrysocolla, in quartz and calcite. *Loc.* Commonwealth M.C. (330), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 158 (1908).

2511. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Azurite, Iron Pyrites, Limonite, and Calcite, in schist, slate, and quartz. *Loc.* Eva M.L. (250), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 152-154 (1908).

2512. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Calcite, and Chlorite, in chloritic schist, gossan, and quartzite. *Loc.* Eva Extd. M.L. (283), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 155 (1908).

2513. —— —— ——. *Assoc.with* Redruthite and Malachite, in chloritic schist. *Loc.* Phœnix M.C. (340), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 157 (1908).

2514. —— —— ——. *Assoc.with* Copper Pyrites, Azurite, Malachite, and Limonite, in schist and quartz. *Loc.* Comet M.L. (243), Hilda Group, S. br. of Slaty Cr., 20 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 182, 183 (1908).

2515. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Calcite, in schist and limestone. *Loc.* Mascotte M.C. (319), Hilda Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 184, 185 (1908).

2516. —— —— ——. *Assoc.with* Cuprite, Malachite, and Limonite, in quartz. *Loc.* Adelaide M.L. (549), Just-in-Time Group, Malbon R., 30 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 85, 86 1908).

2517. —— —— ——. *Assoc.with* Redruthite, Malachite, and Limonite, in ferruginous quartzite and schist. *Loc.* Just-in-Time M.L. (237), Just-in-Time Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 82, 83 (1908).

2518. —— —— ——. *Assoc.with* Cuprite, Redruthite, Malachite, and Limonite, in slate, quartzite, and quartz. *Loc.* Malbon M.F. (2548), Just-in-Time Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 79-81 (1908).

2518A.—— —— ——. *Assoc.with* Redruthite, Malachite, Azurite, and Limonite, in quartz and schist. *Loc.* Morning Star M.L. (306), Lady Group, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 199 (1908).

2519. —— —— ——. *Assoc.with* Redruthite, Malachite, Azurite, and Limonite, in schist, quartzite, and slate. *Loc.* Monitor M.L. (419), Monitor Group, Hampden, 44 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub 215. p. 65 (1908).

2519A.—— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Chrysocolla, Hematite, and Hypersthene, in slate and gossan. *Loc.* Springs Peak M.L. (562), Pearl Group, Corella R., 30 miles W.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 189 (1908).

2520.—— —— ——. *Assoc.with* Redruthite, in schist and quartz. *Loc.* Blue Bell M.L. (609), 5 ch. N. of Noontide Lease, Pioneer Chief Group, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 131, 132 (1908).

2521. —— —— ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, Chrysocolla, Hematite, and Limonite, in slate. *Loc.* Easter Gift M.L. (290), 1 mile E. of Mt. Start, W. of Marabah Township, Pioneer Chief Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 127-129 (1908).

2522. —— —— ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Malachite, Iron Pyrites, and Limonite, in slate. *Loc.* Pioneer Chief M.L. (231), Cone Cr., ½-mile N. of Mt. Start, Pioneer Chief Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 123-125 (1908).

2523. —— —— ——. *Assoc.with* Malachite and Limonite, in chloritic schist. *Loc.* Coronet M.C. (241), Cone Cr., 2¾ miles N. of Mt. Start, Ready Rhino Group, Duck Cr., 23½ miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 96, 97 (1908).

2524. —— —— ——. *Assoc.with* Malachite and Limonite, in ferruginous quartz and schist. *Loc.* White Rose M.L. (330), nr. Cone and Duck Crs., Ready Rhino Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 97 and 98 (1908).

2525. —— —— ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Malachite, Chrysocolla, Iron Pyrites, and Limonite, in schist, slate, and quartzite. *Loc.* Banjo Copper M.L. (590), Tambourine Group of Copper Mines, Duck Cr., 26 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 167-168 (1908).

2526. —— —— ——. *Assoc.with* Redruthite, Malachite, and Iron Pyrites, in schist and quartz. *Loc.* Tharsis M.L. (240), Cone Cr., 1¼ mile N. of Mt. Start, Tharsis Group, Duck Cr., 20 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Assay*: Copper = 3·3 per cent., Gold = 20 gr. per ton, Silver = 2 dwt. per ton. *Ref.* G.S.Q. Pub. 215, pp. 117-120 (1908).

2527. —— —— ——. *Assoc.with* Malachite, in schist and quartz. *Loc.* Waratah M.L. (127), 1 mile N.W. of Mt. Start, Tharsis Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 115, 116 (1908).

2527A. —— —— ——. *Assoc.with* Copper Pyrites, Malachite, Limonite, and Gothite in schist. *Loc.* Brilliant M.C. (159), Slaty Cr., Timberoo Group, 18 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 179-181 (1908).

2528. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Bornite, Malachite, Iron Pyrites, Hematite, Limonite, Hydro-Mica, and Calcite, in schist, slate, and quartz. *Loc.* Timberoo M.L. (716), Friedman's Cr., br. of Slaty Cr., Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 172-175 (1908).

2529. —— —— ——. *Assoc.with* Redruthite, Malachite, Azurite, and Limonite, in gossany quartz and schist. *Loc.* Wallaroo (M.L. 392), Wee MacGregor Group, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 202-205 (1908).

2529a. Cuprite (Tile Ore). *Assoc.with* with Malachite, in quartz. *Loc.* White Oxide M.C. (282), White Oxide Group, Duck Cr.. 24 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 160-161 (1908).

2529b. —— —— ——. *Assoc.with* Gold, Malachite, and Limonite in lode. *Loc.* Soldier's Cap Diggings, 24 miles S.E.byS. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* A.R. p. 278 (1910).

2530. —— —— ——. *Assoc.with* Redruthite, Malachite, and Limonite, in gossany quartz. *Loc.* Flaneur M.L. (655), Dobbyn Group, Coolullah, 70½ miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215 pp. 344 and 345 (1908).

2531. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Azurite, Malachite, Chrysocolla, and Limonite, in schist, slate, and gossan. *Loc.* Mighty Atom M.L. (274), between 6-Mile and Coppermine Crs., Mighty Atom Group, Leichhardt R., 60 to 63 miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 304-306 (1908).

2532. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite, in gossan and quartz. *Loc.* Mt. Bornite M.L. (376), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 309 and 310 (1908).

2533. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Malachite, and Limonite, in slate, schist, and gossan. *Loc.* Mt. Millicent M.L. (663), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 307, 308 (1908).

2534. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite, in slate and kaolin. *Loc.* Mt. Millicent South M.L. (664), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 308, 309 (1908).

2535. —— —— ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Malachite, and Limonite, in schist, slate, and gossan. *Loc.* Mt. Cuthbert M.L. (107), Six-mile Cr., 19 miles S.W. of Coolullah Head Stn., Mt. Cuthbert Group, Leichhardt R., 63 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 315-318 (1908).

2536. —— —— ——. *Assoc.with* Malachite. *Loc.* Mt. Cuthbert M.L. (107), Mt. Cuthbert Group (*ante*). *Average of 5 Assays:* Copper = 42·4 per cent., Gold = 10 gr. per ton, Silver = 14 dwt. 3 gr. per ton. *Ref.* A.R., 1906, p. 46.

2537. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Malachite, Chrysocolla, and Limonite, in schist, gossan, and quartz. *Loc.* Mt. Cuthbert No. 1 Nth. M.L. (381), Mt. Cuthbert Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 318-321 (1908).

2538. —— —— ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Tenorite, Malachite, Iron Pyrites, and Limonite, in slate and gossan. *Loc.* Mt. Metallic R.C. (310), Mt. Metallic Group, Prospector Cr., trib. of Leichhardt R., 52 miles W.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* (and *assay*) G.S.Q. Pub. 215, pp. 295-297 (1908).

2539. —— —— ——. *Assoc.with* Malachite and Atacamite, in schist and slate. *Loc.* Mt. Oxide M.L. (282), Mt. Oxide Group, between Torpedo Cr. and Myally Cr., 109 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Assay:* Copper = 38·6 per cent.; Gold = 19 gr. per ton; Silver = 1 oz. 18 dwt. per ton. *Ref.* G.S.Q. Pub. 215, pp. 362-364 (1908).

2540. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite, in schist, gossan, and quartz. *Loc.* Chance P.A. (283), St. Paul's Group, Leichhardt R., Coolullah, 78 miles N.N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 352-354 (1908).

2541. —— —— ——. *Assoc.with* Redruthite and Malachite, in chloritic schist. *Loc.* Rosetta M.L. (638), St. Paul's Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 351, 352 (1908).

2542. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite, in schist, gossan, and quartz. *Loc.* Isabella M.C. (360), Von Bremen's Group, St. Paul's Cr., Leichhardt R., 70 miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 325, 326 (1908).

2543. —— —— ——. *Assoc.with* Malachite, in quartzite. *Loc.* Warwick Castle M.L. (314), head of St. Paul's Cr., Warwick Castle Group, Coolullah, 69 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, p. 323 (1908).

For further Cloncurry references, *see* Nos. 2552-2561.

2544. —— —— ——. *Assoc.with* Gold, Copper Pyrites, Cuprite, Chalcotrichite, Iron Pyrites, Zinc-Blende, and Calcite. *Loc.* Mt. Perry Copper Mine, 67 miles (by rail) S.W.byW. of Bundaberg (Mt. Perry line). *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M.

2545. ——— ——— ———. *Assoc.with* Cuprite and Malachite, in lode stuff. *Loc.* The Granite, Maytown, 36 miles S. of Laura Rail. Stn. (Cooktown line). *Co.* Chelmsford; *Dist.* **Cook.** *Ref.* O.R.

2546. ——— ——— ———. *Assoc.with* Cassiterite, Ochre, Malachite, and Azurite, in shale and greywacke. *Loc.* Ironclad Tin and Copper Mine, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn., **Walsh and Tinaroo Mineral Fields.** *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 13, p. 21 (1883).

2547. ——— ——— ———. *Assoc.with* Azurite, Malachite, Cuprite, and Red Ochre, in greywacke and shale. *Loc.* Shaughraun Copper Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

2548. ——— ——— ———. *Assoc.with* Copper Pyrites, Azurite, Malachite, and Chalcanthite. *Loc.* Wyatt's Copper Mine, Watsonville (*ante*). *Estimated contents:* Copper = 30 per cent. *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

2549. ——— ——— ———. *Assoc.with* Cuprite, Tenorite, Azurite, Malachite, Chrysocolla, Hematite, Magnetite, in garnet rock. *Loc.* Boomerang Copper Mine, Marble Cr., 1 mile W. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 69, p. 8 (1891), and 119, p. 36 (1897).

2550. ——— ——— ———. *Assoc.with* Copper Pyrites, Bornite, Tetrahedrite, Cuprite, Tenorite, Malachite, Atacamite, Iron Pyrites, and Hematite, in lode in porphyry. *Loc.* Ruddygore Copper Lease, Arbinjoe Cr., 2 miles N.E. of Chillagoe, 141 miles (by rail and road) W.S.W. of Cairns. *Co.* Lynd (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 7 (1891), and 119, p. 39 (1897).

2550A. ——— ——— ———. *Assoc.with* Redruthite, Malachite, and Azurite, in quartz lode. *Loc.* Ortona Copper Mines, S. bank of Percy R., 13 miles N.W. of Gilberton, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* G.S.Q. Pub. 219, pp. 17-19 (1909).

2551. ——— ——— ———. *Assoc.with* Gold, Pyrargyrite, Iron Pyrites, Galena, Cerussite, Copper Pyrites, Cuprite, Malachite, Azurite, Zinc-Blende, Smithsonite, Ironstone, and Calcite, in lode. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120 (1898), and p. 191 (1904).

2552. ——— ——— ———. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Limonite, Calcite, and Epsomite, in quartz lode in schist and quartzite. *Loc.* Duchess M.L. (275), Jack's Cr., br. of Burke R., Duchess Group, 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 18-22 (1908).

2553. ——— ——— ———. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Malachite, and Limonite, in kaolinised rock, schist, and quartz. *Loc.* Italian Copper M.L. (689), Lady Fanny Group, Wills R., 60 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 34, 35 (1908).

2554. ——— ——— ———. *Assoc.with* Copper Pyrites and Malachite, in slates, porphyry, and gossan. *Loc.* Lady Fanny M.L. (178), Lady Fanny Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 30-33 (1908).

2555. ——— ——— ———. *Assoc.with* Malachite and Limonite, in porphyry, quartzite, and quartz. *Loc.* Prodigal M.L. (490), Lady Fanny Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 36 (1908).

2556. ——— ——— ———. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Malachite, Atacamite, Limonite, and Calcite, in quartz and chloritic schist. *Loc.* Blue Jacket M.L. (632), Mt. Hope Group, Wills R., 53½ to 56 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 43, 44 (1908).

2557. ——— ——— ———. *Assoc.with* Copper Pyrites, Redruthite, Covelline (?), Malachite, Iron Pyrites, Limonite, and Calcite, in chloritic schist. *Loc.* Monarch Senior M.C. (352), 3 miles E. of Mt. Hope, Mt. Hope Group, Wills R. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 42, 43 (1908).

2558. ——— ——— ———. *Assoc.with* Redruthite, in quartz reef. *Loc.* Lease (55), Pilgrim Cr., Wills R., 60 to 70 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Assays:* Copper = 14·5 and 26·12 per cent. *Ref.* G.S.Q. Pub. 153, p. 6 (1900).

2559. ——— ——— ———. *Assoc.with* Redruthite, Tenorite, Malachite, Iron Pyrites, and Limonite, in kaolinised slate and gossan. *Loc.* Labour Victory R.C. (29), Agate Down Group, 53 miles S. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 12-14 (1908).

2560. Cuprite (Tile Ore). *Assoc.with* Gold, Cuprite, Tenorite, Malachite, Atacamite, Chalcanthite, Iron Pyrites, Limonite, Calcite, and Chalcedony, in kaolinised slate and gossan. *Loc.* Mt. Elliott R.C. (3, etc.), Mt. Elliott Group, Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin (*ante*). *Ref.* G.S.Q. Pubs. 153, p. 6 (1900), and 215, pp. 3-12 (1908).

2561. —— —— ——. *Assoc.with* Malachite. *Loc.* Mt. Merlin Stn., 84 miles S.byW. of Cloncurry. *Co.* Merlin (*ante*. *Ref.* G.S.M.
For other Cloncurry references, *see* Nos. 2492-2543.

2562. —— —— ——. *Assoc.with* Malachite and Azurite, in lode. *Loc.* P.C., Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Caldwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2563. —— —— ——. *Loc.* Mt. Garnet Mine, Return Cr., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

2563A. —— —— ——. *Assoc.with* Malachite, in quartz lode. *Loc.* Valley of Lagoons Run, 6 miles E. of Wyandotte Tel. Stn., about 64 miles S.E.byE. of Mt. Surprise Rail. Stn. (Etheridge line). *Co.* Gunnawarra; *Dist.* Kennedy North. *Ref.* A.R., p. 176 (1909).

2563B. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite. *Loc.* Mare's Nest Cr., Andromache R., 10 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* A.R., p. 271 (1910).

2564. —— —— ——. *Assoc.with* Malachite and Azurite, in quartz. *Loc.* Stockyard Cr., Silver Mg. Co.'s Mine, Stockyard Cr., trib. of Basalt R., 18 miles N.W. of Hillgrove Head Stn., 70 miles N.N.W. of Charters Towers. *Co.* O'Connell; *Dist.* Kennedy North. *Yield:* 67 tons gave 5,000 oz. of Silver. *Ref.* G.S.Q. Pub. 94, p. 13 (1893).

2565. —— —— ——. *Assoc.with* Copper Pyrites, Bornite, Galena, Cerussite, Hematite, and Mispickel, in lode. *Loc.* Wallaroo Lease (162), nr. Running R. Crossing, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Assay:* Silver = 3 oz. 13 dwt. 12 gr. per ton; Copper = 1·7 per cent. *Ref.* G.S.Q. Pub. 82, p. 11 (1893).

2566. —— —— ——. Kennedy Copper Mine, Sandy Cr., Star R., br. of Burdekin R., 50 miles W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.M.

2567. —— —— ——. *Assoc.with* Gold, Copper Pyrites, and Malachite, in lode. *Loc.* Shaft nr. Orchid No. 1 N. Claim, Eungella Goldfield, 48 miles W.S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* A.R., p. 155 (1908).

2568. —— —— ——. *Assoc.with* other Copper Ores. *Loc.* Peak Downs Copper Mine, Copperfield, 5 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* BD.

2568A. —— —— ——. *Assoc.with* Malachite, in slate. *Loc.* Clooracorn P.P.A. (147), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, p. 21 (1910).

2568B. —— —— ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Malachite, Azurite, Chlorite, and Calcite, in slate and granite. *Loc.* MacFadzen's M.F. (1749), includes Douchang, Flora, Essie, Dozzler, and Green Outcrop Lodes, Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 31-35 (1910).

2569. —— —— ——. *Assoc.with* Gold (trace), Silver, Minium, Copper carbonate, and Steatite, in ferruginous quartz reef. *Loc.* 4 miles N.W. of junction of Tierawoomba and Boothill Crs., about 50 miles S.S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 7 (1887).

2570. —— —— ——. *Assoc.with* Copper Pyrites, Native Copper, Cuprite, Malachite, Azurite, Iron Pyrites, Hematite, Magnetite, Limonite, and Calcite. *Loc.* Many Peaks Copper Mines, 58 miles (by rail) S. of Gladstone (Boyne Valley line). *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pubs. 150, p. 8 (1900), and 194, p. 28 (1904).

2571. —— —— ——. *Assoc.with* Azurite and Malachite, in ferruginous quartz. *Loc.* Mt. Alice, Bullock Cr., Gigoomgan Stn., 25 miles W.S.W. of Maryborough. *Co.* Lennox; *Dist.* **Wide Bay.** *Assay:* *See* No. 259. *Ref.* A.R., p. 112 (1907).

2572. —— —— ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Malachite, and Azurite. *Loc.* Teebar Copper Mine, Munna Cr., 2 miles S. of Boompa Rail. Stn. (Gayndah Br. line). *Co.* Lennox (*ante*). *Ref.* G.S.M.

Curra. Great George Mine. *Min.Ref.* Gold, *see* 4544.

Curra Rail. Stn. Two miles from North Coast line. *Min.Ref.* Limestone, *see* 697.

Curra Diggings. Old name for Gympie Goldfield.

Currajong Bore. *See under* Artesian Bores. No. 351.

Curralle Co.; Gregory South Dist. *See map*, Pl. 18.

Currandotta Co.; Gregory North Dist. *See map*, Pl. 20.

Currawilla Co.; Gregory North Dist. *See map*, Pl. 20.

Currawinya (Yuleemya) Bores. *See under* Artesian Bores. No. 177.

Currency Reef. Dreghorn Diggings. *Min.Ref.* Galena, *see* 2955; Gold, 4082; Iron Pyrites, 5277.

Currumbin Beach. One mile N. of Pt. Danger, Tweed Heads. *Min.Ref.* Cassiterite, *see* 1174; Gold, 3370, 3371; Magnetite, 6033; Monazite, 6881; Platinum, 7073; Silver, 7511.

Geological Note: The beach sands between Point Danger and Currumbin Creek, a distance of 5 miles, contain traces of Tin, Gold, Platinum, and Monazite, together with Zircon, Topaz, Magnetite, Ilmenite, and Tourmaline. Deposits containing the heavier minerals are formed along the beach during southerly and south-easterly gales. *See* G.S.Q. Pub. No. 198 for details.

Curry's Bores. *See under* Artesian Bores. No. 156.

Curtis Island. Five miles N. of Gladstone, between Port Curtis and Keppel Bay, 30 miles in length, 5 to 15 miles in width. Centre—about *Lat.* 23° 35′ S., *Long.* 151° 13′ E. *See maps*, Pls. 2, 3. *Min.Ref.* Apatite, *see* 79; Native Sulphur, 7668.

Geological Note: The rocks of Curtis Is. comprise Devonian slates, quartzites, and fine-grained sandstones, and form a continuation of the same series of rocks occurring at Cawarral to the north-east, and on the islands of Keppel Bay. They are phosphate-bearing, containing turquoise and apatite, but no deposits have been found of commercial value. *See* G.S.Q. Pubs. 143, 190, and 194 for details.

Cusack (W. G. Kelly), Warden. Report on Ollera Cr. Wolfram Field. Q.G.M.J., vol. 5, pp. 517-519 (1904).

Cushnie Parish Bores. *See under* Artesian Bores. No. 19.

Customs Duties (Commonwealth). Those specially referring to *minerals, metals, mining* and *metallurgy*. Preferential duties are those which are imposed only on manufactures of the United Kingdom.

Acids (hydrochloric, nitric, sulphuric), *ad val.* 15 per cent.
Aluminium and alloys. Free.
Antimony and antimonial lead compounds, *ad val.* 20 per cent. general, 15 per cent. preferential.
Asbestos (millboards, yarn, cloth), free; (packing, coverings), *ad val.*, 20 per cent.; (cement), *ad val.*, 30 per cent. general; 25 per cent. pref.
Assaying appliances. Free.
Barytes—per cwt., 2s.
Bricks (fire and glazed), *ad val.* 15 per cent.
Bronzing powders. Free.
Bullion and coin. Free.
Calcium carbide. Free.
China (Parian and porcelain ware), *ad val.* 25 per cent. general, 20 per cent. pref.
Coal-cutting machines, *ad val.* 5 per cent. general, free pref.
Coke. 4s. per ton.
Copper (metallic). Free.
Crucibles. Free.
Cyanide of potash. Free.
Dredging machinery, *ad val.* 25 per cent. general, 15 per cent. pref.
Earthenware, stoneware, brownware, *ad val.* 25 per cent. general, 20 per cent. pref.
Emery stones. Free.
Excavating machinery, *ad val.* 25 per cent. general, 15 per cent. pref.
Filter presses. Free.
Firebricks, glazed bricks, *ad val.* 15 per cent.
Fireclay manufactures, *ad val.* 15 per cent.
Gemstones. *See* Precious stones.
Graphite (plumbago, black lead), *ad val.* 20 per cent.
Incandescent mantles, *ad val.* 25 per cent. general, 15 per cent. pref.
Iron. Varies from 10s. to 30s. per ton.
Kerosene. Free.
Lead (sheet). Free. Antimonial lead, *see under* Antimony.
Lithographic stones. Free.

Customs Duties—*continued:*

Manganese, *ad val.* 5 per cent.
Marble (rough), *ad val.* 10 per cent.
Metal powders. Free.
Metallurgical appliances, *ad val.* 25 per cent. general, 15 per cent. pref.
Mineral oils. Per gal. ¾d. general, ½d. pref.
Mineral waters, *ad val.* 25 per cent.
Mineralogical cabinets. Free.
Natural History specimens. Free.
Oil stones. Free.
Ore-dressing machinery, *ad val.* 25 per cent. general, 20 per cent. pref.
Petroleum (crude). Free.
Pigments (dry colours)—per cwt., 4s. 6d. general; 4s. pref. (dry); (dry white lead, putty)—per cwt., 2s. peneral; 1s. 6d. pref.
Plaster of Paris—per cwt., 1s. general; 9d. pref.
Platinum (metallic). Free.
Porcelain. *See under* China.
Portland Cement—per cwt., 1s. general; 9d. pref.
Precious stones, free; (imitation stones), *ad val.*, 40 per cent. general; 35 per cent. pref. *See* notes on the imposition of this duty *under* Import Duties on Gems.
Rock-boring machines, *ad val.* 25 per cent. general, 20 per cent. pref.
Rock drills, *ad val.* 3 per cent.
Surveying instruments. Free.
Tiles (flooring, roofing, cement), *ad val.* 30 per cent. general, 25 per cent. pref.; (asphalt), 15 per cent.
Vermillions (cinnabar), *ad val.* 5 per cent.
Whetstones. Free.
White lead. *See under* Pigments.
Whiting—per cwt., 6d.
Zinc (metallic). Free.

Cut Log Cr. Flows into Running Cr. nr. its junction with Munna Cr., 25 miles N.W. of Gympie. *Min.Ref.* Barytes, *see* 284.

Cuze's Silver Lease, Silverfield. *Min.Ref.* Anglesite, *see* 18; Galena, 2776.

Cyanite. *Syn.* Kyanite, *which see.*

Cyanochalcite, *var.* of Chrysocolla, *which see.*

Cypress Downs Bores. *See under* Artesian Bores. No. 90.

Dagmar Co.; Cook Dist. *See map,* Pl. 8.

Dagworth Reef, Woodville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3764.

—— Run Bores. *See under* Artesian Bores. Nos. 238, 239.

Dahra Sub-artesian Bore. *See under* Artesian Bores. No. 318.

Daintree (Richard), was Geologist of S. Queensland in 1868 and 1869; afterwards Agent-General for Queensland.

Publications (Official and Otherwise):

Notes on the Geol. of the Col. of Queensland, etc. Quart. Jour. Geol. Soc. (1872).

Notes on Certain Modes of Occurrence of Gold in Australia. Q.J.G.S.

Iron in Queensland. Min. Jour. (London), 1874, p. 447. (1878).

Tin in Queensland. Min. Jour. (Lond.), 1872, p. 689.
[On the Desert Sandstone.] Proc. Roy. Geogr. Soc., 1875, p. 489.
The Age of the N.S.W. Coal Beds. Geologist, 1864, p. 72.
Queensland, Australia: Its Territory, Minerals, etc., etc. (Lond.), 1873, p. 117.

Daintree Coal Seam, Bowen River Coalfield. *Min.Ref.* Coal, *see* 1650.

—— Copper Mine, S.E. of Einasleigh. Discovered by Messrs. McClelland and Power in July, 1908. *Min.Ref.* Azurite, *see* 186B; Copper Pyrites, 2141B; Cuprite, 2427A; Malachite, 6214A.

—— Knob, Black Ridge, Clermont. *Min.Ref.* Gold (alluvial), *see* 3299; Marcasite, 6512.

Dairying Co. Sub-artesian Bore. *See under* Artesian Bores. No. 352.

Dairy Cr., Dee R. Alluvial gold discovered here in 1865.

Daisy Bismuth Mine, Sellheim Mineral Field. *Min.Ref.* Azurite, *see* 231A; Bismite, 314; Bismuth (native), 350; Bismuthinite, 374; Bismutite, 407; Copper Pyrites, 2266; Cuprite, 2468; Galena, 3022; Hematite, 4762; Ironstone, 5591; Malachite, 6329; Manganese-dioxide, 6446.

—— Gold Mine, Coen Goldfield. *Min.Ref.* Calcite, *see* 486; Fluorspar, 2655; Gold, 3693; Iron Pyrites, 5028; Pinite, 7066.

—— Group of Copper Mines, Cloncurry. *Includes* Woomera M.L., Horseshoe M.L., Meteor M.C., Tulip 1 E. M.C. and 1 W. M.L., Daisy United M.C., Daisy Block S. M.L., Buttercup M.L., Mist M.C., Perseverance M.C., etc. *Min.Ref.* Actinolite, *see* 4852, 4853; Calcite, 453; Chlorite, 1422; Copper Pyrites, 2075, 2076; Cuprite, 2397, 2398; Epidote, 2591; Gold, 3469; Hematite, 4683; Iron Pyrites, 4923; Limonite, 5756-5759; Malachite, 6107-6111; Redruthite, 7216-7218; Tenorite, 7710; Tile Ore, 2503, 2504.

—— United M.C. 155, Cloncurry. *Min.Ref.* Actinolite, *see* 4852; Calcite, 453; Chlorite, 1422; Copper Pyrites, 2076; Cuprite, 2398; Epidote, 2591; Gold, 3469; Iron Pyrites, 4923; Limonite, 5757; Malachite, 6108; Redruthite, 7217; Tenorite, 7710; Tile Ore, 2504.

Dalby, 153 miles (by rail) W.byN. of Brisbane. *Co.* Aubigny; *Dist.* Darling Downs. *Lat.* 27° 32′ S.; *Long.*, 151° 15′ E.

GEOLOGICAL NOTE: The prevailing rocks at Dalby are sandstones, shales, etc., belonging to the Walloon Series (Trias-Jura), and covered in places by remnants of an old basalt flow. *See* G.S.Q. Pub. 143, p. 18, *for details.*

CHAMBER OF COMMERCE. J. A. J. Hunter, Secretary.

——. (Coal near.) *See under* Govt. Ming. Jour., Report No. 106.

—— Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 20, 21, 117, 118, 119, 120, 175, 240, 241.

—— Cattle Yards Bore. *See under* Artesian Bores. No. 73.

—— Coal Bore. *See under* Coal Bores.

Dalcoath Lode, head of Return Cr., 3 miles W. of Coolgarra. *Min.Ref.* Cassiterite, *see* 1062.

Dalgetty Sub-artesian Bores. *See under* Artesian Bores. No. 323.

Dalgi (old and new) Bores. *See under* Artesian Bores. No. 244.

Dalgonally Lease Bores. *See under* Artesian Bores. No. 242.

—— Meatworks Sub-artesian Bore. *See under* Artesian Bores. No. 366.

Dalmally Freehold Bore. *See under* Artesian Bores. No. 243.

Dalmore Bore. *See under* Artesian Bores. No. 198.

Dalrymple, 21 miles N.W.byN. of Charters Towers. *Lat.*, 19° 40′ S.; *Long.*, 145° 38′ E. *See maps*, Pls. 16, 17. *Min.Ref.* Chrysocolla, *see* 1533, 1534; Copper (native), 2003; Limestone, 656; Malachite, 6315.

—— Co. Kennedy North Dist. *See map*, Pl. 16.

—— Cr., Allora. *Min.Ref.* Coal, *see* 1632; Corundum, 2370; Sapphire, 2362.

—— Div. Bd. Sub-artesian Bore. *See under* Artesian Bores. No. 121.

—— M.F. (1865), Mt. Flora G. and M. Field. *Min.Ref.* Malachite, *see* 6339F; Redruthite, 7299A.

Dalysford (Rail. Stn.), (Mt. Perry line), 36 miles W.S.W. of Bundaberg. *Railway Base* for Limestone Quarries in its vicinity. *Min.Ref.* Limestone, *see* 693; Magnetite, 5971.

GEOLOGICAL NOTE: Limestones of undetermined age occur here in association with rocks of Gympie Formation (Permo-Carboniferous). *See* G.S.Q. Pub. 194 p. 50 for details.

Dalzell Bore. *See under* Artesian Bores. Nos. 195, 244.

Dalziel's Mines, head of Reid's Cr., N.E. of Ord Rail. Stn. *Min.Ref.* Cassiterite, *see* 952A.

Dam, Sub-artesian Bore. *See under* Artesian Bores. No. 269.

Damora, Rossel Is., Brit. New Guinea. *Min.Ref.* Limonite, *see* 5930; Gold, 4553.

Dandy's Knob, Par. of Kholo, N. of Ipswich. *Min.Ref.* Manganese-dioxide, *see* 6452.

Dan O'Connell Mine, Charters Towers. *Min.Ref.* Galena, *see* 2880; Gold, 3897; Iron Pyrites, 5161.

—— —— ——, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3837.

Dandy P.A. (297), Cloncurry. *Min.Ref.* Calcite, *see* 459; Cuprite, 2406; Cyanochalcite, 1537A; Ferro-calcite, 572; Limonite, 5776; Malachite, 6135; Native Copper, 1980; Redruthite, 7237.

Darby Point Sub-artesian Bore. *See under* Artesian Bores. No. 42.

Dareel Bore. *See under* Artesian Bores. No. 362.

Dargalong, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line). *Min.Ref.* Anglesite, *see* 30-35; Argentite, 95; Arsenic, 99; Asbestos, 106; Barytes, 267; Cerussite, 1195-1201; Cinnabar, 1543; Copper carbonate, 1893, 1894; Fluorspar, 2663; Galena, 2793-2796; Hematite, 4714; Ironstone, 5528; Massicot, 6527-6529; Minium, 6582-6588; Oligoclase, 6917; Prase, 1398; Talc, 7675.

Geological Note: The whole of the mines are situated in mica schist country, the lodes containing silver, lead, and copper. *See* G.S.Q. Pub. 69 *for details.*

Darkey Flat, Talgai Goldfield. *Min.Ref.* Gold (alluvial), *see* 3253, (reef) 3855; Manganese-dioxide, 6425.

Darling Downs District—

Situation, etc.: *See maps,* Pls. 12 and 13. *Lat.*, 26° and 29°; *Long.*, 149° and 153°. It is bounded on the N. by the Districts of Leichhardt and Burnett, on the E. by the District of Moreton, on the S. by the State of New South Wales, and on the W. by the District of Maranoa. Rivers in the District are Condamine, Moonie, Weir, Barwon or Macintyre (tribs. Dumaresq (or Severn) and Macintyre Brook).

Area: 25,390 sq. miles.

Principal Mining Centres: *Gold and Mineral Fields*—Stanthorpe, MacDonald, Pikedale, Canal Cr., Talgai, Thanes Cr., Leyburn, Palgrave, and Lucky Valley, *which see.* *Coal Fields*—Clifton, Kingsthorpe, Oakey, and Tannymorel, *which see.*

Counties:

Aubigny Co.—

Bowenville, Cambooya, Clifton (Coal), Dalby, Emu Vale, Kingsthorpe (Coal), Harlaxton, Jimbour, Jondaryan, Oakey (Coal), Pittsworth (Beauraba), Toowoomba, Westbrook.

Auburn Co.

Bentinck Co. Stanthorpe Mineral Field (in part—*See also* Clive, Marsh, Merivale Cos.). Bodumba, Broadwater, Glenelg, Jibbinbar (in part—*See also* Clive Co.). Macintyre Brook, Nundubbermere, Pikedale Goldfield, Pike's Cr., Treverton, Thulimbah.

Bulwer Co—Miles.

Carnarvon Co.

Clive Co.—Stanthorpe Mineral Field (in part—*See also under* Bentinck Co.). Texas, Silver Crown Mine (silver, copper), Silver King Mine (silver, lead), Silver Spur Mine (silver, lead, copper, gold), Glenlyon, Jibbinbar, Macdonald Prov. Goldfield.

Derby Co.

Lytton Co.—Chinchilla, Jandowie, Jingi Jingi, Warra, Macalister (coal).

Marsh Co.—Goondiwindi, Stanthorpe Mineral Field (*in part—See also under* Bentinck Co.

Merivale Co.—Stanthorpe Mineral Field (in part—*See also under* Bentinck Co.). Allora, Canal Cr. Goldfield, Dalveen, Hendon, Killarney, Leyburn Goldfield, Palgrave Goldfield, Talgai Goldfield, Tannymorel (Coal), Thanes Cr. Goldfield, Warwick.

Pring Co.

Rogers Co.

Mineral References and Statistics: *See under* names of Principal Mining Centres.

Geological Note: To the north, south, east, and west of Toowoomba there are Coal Measures of Walloon Formation (Trias-Jura), covered or partly covered, by an old basalt flow. To the west of Toowoomba, beyond the Condamine River, the Coal Measures are covered by "Desert Sandstone" (Upper Cretaceous) and Rolling Downs (Lower Cretaceous), and in old watercourses there are Tertiary drifts containing the fossil remains of animals. *See* G.S.Q. Pub. No. 217 for map.

Collieries.—*King's Siding*—Gowrie Colliery, and several abandoned mines; *Kingsthorpe*—Sugarloaf, Kingsthorpe, Sunrise, and Enterprise Collieries; *Oakey*—Federal Colliery; *which see.*

Darlington Reserve, nr. Beaudesert Rail. Stn. *Min.Ref.* Amethyst, *see* 7172; Opal (common), 6994.

Darr Sub-artesian Bore. *See under* Artesian Bores. No. 41.

—— River Downs Run Bores. *See under* Artesian Bores. No. 245. *Min.Ref.* Coal, *see* 1707c.

—— Water Farms. *See under* Sub-artesian Bores. No. 246.

Daroo Co.; Gregory South Dist. *See map*, Pl. 18.

Dartmouth Bore. *See under* Artesian Bores. No. 437.

Daru Is., mouth of Oriomeo (Tate) R., Brit. New Guinea. *Min.Ref.* Coal, *var.* Lignite. *See* 1831.

Dattu Dattu Mine, 25 miles N.N.E. of Crow's Nest Rail. Stn. *Min.Ref.* Bismuthinite, *see* 374A; Gold, 4193A.

Daunton's Hill, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4063.

Dave Cr., nr. Fairlight Stn., W.byS. of Cooktown. *Min.Ref.* Coal, *see* 1613, 1614.

Davenport Co.; Kennedy North Dist. *See map*, Pl. 16.

—— Cr. and Mt. Davenport (between), Cape River Goldfield. *Min.Ref.* Gold, *see* 4046; Hematite, 4738; Iron Pyrites, 5261.

—— Lease Bores. *See under* Artesian Bores. No. 247.

Davenport's Sel. (69), 6 miles S.E. of Beenleigh Rail. Stn. *Min.Ref.* Iron Pyrites, *see* 5350.

Davis Sub-artesian Bore. *See under* Artesian Bores. No. 273.

Dawes Bores. *See under* Artesian Bores. No. 266.

Dawes Range. Connects with the Burnett Range about 55 miles S. of Gladstone, and extends N.W. and joins the Calliope Range about 40 miles S.S.W. of Gladstone. *Min.Ref.* Actinolite, *see* 4857; Anglesite, 14; Galena, 2737; Gold (alluvial) 3199, (reef) 3658, 3659; Limonite, 5834; Silver, 7446.

Dawn (Don) R., S. of Bowen. *Min.Ref.* Anglesite, *see* 43; Copper Pyrites, 2238; Galena, 2954.

—— of Hope Gold Mine, Ridgeland Goldfield. *Min.Ref.* Gold, *see* 4340; Limonite, 5912A.

—— —— Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1077.

—— —— (now Just-in-Time) Reef, Thanes Cr. Goldfield. *Min.Ref.* Gold, *see* 3867; Ironstone, 5543.

Dawson Coal Mines, W. side of Dawson R., 75 miles S.W. of Rockhampton. Dunstan Seam of Coal discovered in 1898. *Min.Ref.* Coal, *see* 1691.

—— Co.; Leichhardt Dist. *See map*, Pl. 10.

Dawson River, S.S.W. of Rockhampton. *See* Pls. 10, 34. *Min.Ref.* Coal, *see* 1691, 1692; Copper ore, 1850; Kerosene Shale, 5713; Opal (common and wood), 6985. *See also* Supplementary Report List, No. 139.

Geological Note: Permo-Carboniferous rocks prevail throughout the district. The older series (Gympie Formation) contain small irregular copper deposits, while in the later-formed series (Dawson-Mackenzie Coal Measures) there are several anthracitic coal seams of fine quality. Over the coal measures "Desert Sandstone" has been deposited, and remnants of this formation now exist as ranges and isolated peaks. *See* G.S.Q. Pub. No. 155 for details and map.

—— —— Bores (Dunstan Co. and Dawson R. Co.). *See under* Coal Bores. Several bores have been sunk, of which there are no records available.

—— —— Anthracite Coal Co.'s Bores. *See under* Coal Bores.

—— and Dee Rivers (junction of), 36 miles S.S.W. of Rockhampton. *Min.Ref* Halloysite, *see* 4662.

Dawson and Mackenzie Coal Fields. *See maps*, Pls. 10, 11, 33. *Mines:* Bluff, Columba, Dawson River Anthracite, Dunstan Syndicate, Admiralty Mammoth, Stanley, Queensland Anthracite, Walleroo. *See under* List of Maps *under* Department of Mines Publications, and Supplementary Report List, Nos. 103, 108, 112, 114.

Day Dawn Block and Wyndham Gold Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2881; Gold, 3898; Iron Pyrites, 5162.

—— —— Gold Mines Ltd. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2882; Gold, 3899; Iron Pyrites, 5163.

—— —— P.C.G.M. Lease, Charters Towers. *Min.Ref.* Galena, *see* 2883; Gold, 3900; Iron Pyrites, 5164; Zinc-Blende, 8122.

—— —— 3A W. and 5 W. Mines, Charters Towers. *Min.Ref.* Galena, *see* 2884; Gold, 3901, 3902; Iron Pyrites, 5165, 5166; Zinc-Blende, 8123.

—— —— Reef, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, and Iron Pyrites, *see* 3952.

—— —— ——. Tabletop, Croydon Goldfield. *Min.Ref.* Gold, *see* 3547.

—— —— ——. Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4010.

—— —— Silver Mine, Silverfield. *Min.Ref.* Pyrargyrite, *see* 7112.

—— —— Tin Lease (170), Kangaroo Mineral Field. *Min.Ref.* Bornite, *see* 426; Cerussite, 1238; Copper carbonate, 1926; Cuprite, 2460; Galena, 2963; Lievrite, 5737; Malachite, 6306; Redruthite, 7298.

—— —— —— Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1078; Tourmaline, 7860.

—— —— —— ——. Irvinebank. *Min.Ref.* Cassiterite, *see* 861; Tourmaline, 7852.

—— —— —— ——. Watsonville. *Min.Ref.* Cassiterite, *see* 893; Chlorite, 1436; Kaolin, 5677.

Daylesford, *see* Dalysford.

De Lazra's Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Dead Cat Mine, Horn Island Goldfield. *Min.Ref.* Galena, *see* 2817; Gold, 3807; Iron Pyrites, 5090.

—— —— or Mystery Reef, Horn Island Goldfield. *Min.Ref.* Galena, *see* 2820; Gold, 3822; Iron Pyrites, 5090, 5092, 5096, 5097.

—— Finish Mine, Barron R., S.W.byS. of Cairns. *Min.Ref.* Bismutite, *see* 396; Wolfram, 7973.

—— Horse Lead, Clermont Goldfield. *Min.Ref.* Chrome-bearing Talc, *see* 1471; Gold (alluvial), 3320; Talc, 7681.

Deadlock M.L. (542), Cloncurry. *Min.Ref.* Malachite, *see* 6094; Tile Ore, 2497.

Deas Thompson Co.; Port Curtis Dist. *See map*, Pl. 2.

Deboyne Group, Louisiade Archipelago, Brit. New Guinea. *Min.Ref.* Limestone (Coralline), *see* 726.

Deceitful Susan Reef, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2759; Gold, 3742; Iron Pyrites, 5056.

Deception Cr., 50 miles S. of Gladstone. *Min.Ref.* Azurite, *see* 243A; Calcite, 529; Copper (native), 2009; Copper Pyrites, 2287; Cuprite, 2472; Hematite, 4785; Iron Pyrites, 5364; Limonite, 5907; Magnetite, 6035; Malachite, 6352.

Decima M.C. (304), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1511A; Malachite, 6160A.

Decorative Stones. *See* Ornamental Minerals.

Dee River. Rises 8 miles E. of Mt. Morgan and flows S.W. and N.W. into the Dawson R. 65 miles S.W. of Rockhampton. Length, about 65 miles. *Min. Ref.* Biotite, *see* 309A; Copper carbonate, 1960; Copper Pyrites, 2310; Epidote, 2606, 2607; Gold (alluvial) 3395, 3402, (nugget) 3446; Ironstone, 5627; Limestone, 692; Limonite, 5918; Mispickel, 6804. *See also under* Gov. Mining Jour., Report No. 26.

—— —— Gold Nuggets. First nuggets discovered 1st Sept., 1903. *Ref.* A.R.D.M., p. 152 (1903). These nuggets were obtained in alluvial deposits, and it was commonly supposed that they were formed where they were found. An examination of some of the specimens revealed the fact that they had crystallized between and around quartz prisms, and evidently in a reef. Their surfaces were always etched, an effect caused by the leaching action of mineral solutions after they were deposited in the alluvium. They are remarkable for the quality of gold they contain, this being so much higher than the gold from the reefs in the vicinity, yet corresponding with that at Mt. Morgan, many miles away. *See* G.S.Q. Pub. No. 190 for notes. *See* Min.Ref. 3446 for list of nuggets.

—— —— Alluvial Gold Mines, Mt. Morgan Goldfield. *Min.Ref.* Calcite, *see* 547A; Copper Pyrites, 2310A; Epidote, 2605; Gold (alluvial) 3395, (nuggets) 3446.

—— —— Copper Mines, above Dundee, 20 miles S.S.W. of Mt. Morgan. *Min. Ref.* Biotite, *see* 309A; Chalcedony, 1363A; Copper carbonate, 1960; Copper Pyrites, 2310; Ironstone, 5627; Mispickel, 6804.

—— —— and Dawson (junction of), S.S.W. of Rockhampton. *Min.Ref.* Halloysite, *see* 4662.

Deep Bore. *See under* Artesian Bore. No. 264.

—— Cr., Gympie Goldfield. *Min.Ref.* Gold (alluvial), *see* 3416.

—— —— Leads, Clermont. *Includes* Bald Hills, Chinaman's Gully, Deep Cr., Long Gully, Nuggety Gully, Prince of Wales Gully, Puddler's Gully, Red Hill, Scotchman's Gully Leads. *Min.Ref.* Gold (alluvial), *see* 3321.

—— Ground, Black Ridge, Clermont. *Min.Ref.* Coal Bands, *see* 1660-1664; Epsomite, 2616; Gold (alluvial), 3300-3306; Halloysite, 4661; Hematite, 4765.

Deep Tin Lead. Herberton. Discovered in May, 1883, by J. Macdonald. *Min. Ref.* Cassiterite, *see* 1123; Gold, 3255; Ilmenite, 4899; Natrolite, 6898; Olivine, 6926; Opal (wood), 7007; Topaz, 7800; Wolfram, 8015. *See also under* Gov. Mining Jour., Report No. 121.

Geological Note: This important tin lead has been recognized as an old river course connected, although not identical, with the Wild River. It is covered in places by basalt, and the portions of it not denuded away occupy positions on the hills much above the present level of the river. *See* G.S.Q. Pub. No. 115 for details and maps.

Deep Lead, Pentland, Cape R. Goldfield. *See maps*, Pls. 16, 17. *Min.Ref.* Gold (alluvial), *see* 3272.

Geological Note: The drift above the wash is composed of pebbles of quartz, schist, granite, and quartzite. The "wash" is made up of quartz pebbles in a cement, and rests on a bedrock of decomposed schist. *See* G.S.Q. 96 for details and map.

—— —— Gold Bores, Gympie. *See* Gympie Goldfield, *under* Gold Bores.

—— Levels Mines, Charters Towers Goldfield. *Min.Ref.* Gold, *see* 3903; Iron Pyrites, 5167.

—— Mines, Saratoga Leases (406 and 537), Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4033.

—— Rocky Gorge, N.byE. of Murphy's Cr. Rail. Stn. *Min.Ref.* Copper Pyrites, *see* Galena, 3033A; Zinc-Blende, 8175A.

Deep Sinking Vote. Up to June, 1912, the sum of £80,702 has been spent by the Government in assisting mining in this way. *See* details *under* Subsidies.

—— Water Bore. *See under* Artesian Bores. No. 207.

Deer Park Sub-artesian Bore. *See under* Artesian Bores. No. 157.

Defiance Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

—— Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1079; Fluorspar, 2670; Serpentine, 7385; Wolfram, 8016.

Degalgil Cr., S. of Gladstone. *Min.Ref.* Limonite, *see* 5905.

Degilbo. 58 miles (by rail) W. of Maryborough, on Maryborough-Gayndah line. *Co.* Cook; *Dist.* Burnett. *Lat.*, 25° 29′ S.; *Long.*, 152° 00′ E.

RAILWAY BASE for Paradise, Stanton-Harcourt, Gebangle, and Mt. Shamrock Gold and Mineral Fields; Havilah Gold Mine, Commonwealth Gold and Bismuth Mine, and Don Jon Bismuth Mine at Mt. Havilah; Robina Copper Mines at Mt. Hawick; and Mt. Hastings Gold Mine.

GEOLOGICAL NOTE: The country about Degilbo is made up of altered sedimentary rocks of probably Gympie Formation (Permo-Carboniferous). Slates occur about the township, and extend easterly towards Biggenden. Limestone quarries have been worked 1½ mile to the east of Degilbo, but are now idle. Mineral deposits of iron, bismuth, gold, and copper are found in association with the altered sedimentary rocks near the granite, but are not being exploited. The district is well worth further prospecting for bismuth, copper, zinc, and gold deposits. *See* G.S.Q. Pubs. Nos. 168 and 207 for details.

—— (Par. of) (Pors. 52v. and 54v.). *Min.Ref.* Manganese-dioxide, *see* 6398.

—— and Kilkivan (between). *Min.Ref.* Limestone, *see* 628.

—— and Stanton-Harcourt Runs (between). *Min.Ref.* Gold (alluvial), *see* 3192; Massicot, 6523.

Deighton (Edward). Once Under Secretary of Mines. Term of office—1880 to 1887.

Deighton R., 12 miles S. of Welcome Rail. Stn. (Cooktown line). *Min.Ref.* Coal, *see* 1603.

Delaney R., Charleston, Etheridge Goldfield. *Lat.*, 18° 30′ S.; *Long.*, 143° 23′ E. *Min.Ref.* Fluorspar, *see* 2656; Gold, 3723A.

Delena (Hall Sound), Brit. New Guinea. *Min.Ref.* Limestone (coralline), *see* 727.

Deloura Cr., br. of Auburn R., W.byS. of Gympie. *Min.Ref.* Gold, *see* 3631; Kaolin, 5673.

Delta Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 22, 427.

Democrat Reef, Flanagan's, Croydon Goldfield. *Min.Ref.* Gold, *see* 3504.

—— ——, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

Denham Colliery, Bundamba Coal Area, Ipswich. *Min.Ref.* Coal, *see* 1735A.

—— Plains Bore. *See under* Artesian Bores. No. 391.

Denison Co. Leichhardt Dist. *See map*, Pl. 10.

—— Cr., 24 miles S.byW. of Mackay. *Lat.*, 21° 33′ E.; *Long.*, 148° 53′ E. *Min.Ref.* Limonite, *see* 5884.

—— Reef, Old Homestead Diggings. *Min.Ref.* Gold, *see* 4069.

Denne's Sub-artesian Bore. *See under* Artesian Bores. No. 399.

Dennis's Sel., Por. 121, 4½ miles N.E. of Loganlea Rail. Stn., S.E. of Brisbane. *Min.Ref.* Coal, *see* 1777D.

—— —— (381), 5 miles N. of Beenleigh Rail. Stn. *Min.Ref.* Ironstone, *see* 5614; Manganese-dioxide, 6456.

Denny's Mary Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1080.

D'Entrecasteaux Group, Brit. New Guinea. *Min.Ref.* Cinnabar, *see* 1564; Gold (alluvial), 3421; Iron Pyrites, 5473; Sulphur (native), 7669-7670; Sanidine, 7056.

Dent's Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4271; Silver, 7522.

Department of Mines—

HEAD OFFICE: Treasury Buildings, Brisbane.

Minister: Hon. J. Geo. Appel, Secretary for Mines.
Permanent Head: A. R. Macdonald, Under-Secretary for Mines.

SUB-DEPARTMENTS *(for which see separate heading).*
Geological Survey of Queensland.
Inspectors of Mines.
School of Mines, Charters Towers.
Wardens.
Government Mining Journal.
Board of Examiners for Mining Managers.

FORMER MINISTERS: *See* Secretaries for Mines (List of).

FORMER UNDER-SECRETARIES: *See* Under-Secretaries for Mines (List of).

PUBLICATIONS—

Annual Reports of the Under-Secretary for Mines. From 1878 to 1912. Contain Reports of Under-Secretary, Wardens, State Mining Engineer, Inspectors of Mines for Southern, Central, and Northern Divisions; Director, Charters Towers School of Mines; Geological Survey of Queensland; Editor of "Queensland Government Mining Journal," also containing Statistical Tables referring to output and value of minerals, etc., etc.

Pamphlets—
Mining Acts and Regulations.
General Report on Mining Industry for 1895 (P. F. Sellheim).
The Establishment of Smelting Works in Queensland (C. F. V. Jackson).
Resourceful Queensland (H. E. Poole).

Special Reports in Annual Reports—
Charters Towers Goldfield (History of), (1887), pp. 23-27.
Ravenswood Goldfield (History of), F. Vaughan (1887), pp. 35-38.
Rockhampton Goldfields (History of), G. L. Lukin (1887), pp. 45-49.
Eidsvold Goldfields (History of), E. F. Craven (1887), pp. 66-68.
Stanthorpe Tinfields (History of), P. Cardew (1887), pp. 77-79.
Chillagoe Caves (Description of), W. Thompson (1891), pp. 135-8.
Mt. Morgan G.M. Coy. (Modus operandi at) G. H. Irvine (1895), pp. 50-52.
Western Queensland Opal Mining. J. B. Hickie (1895), p. 54.
Queensland Coal Mining Industry and Coal Resources (Report on), W. Fryar (1899), pp. 156-195.
Conditions and Modes of Working on the Goldfields of Queensland (Report on). W. Blane (1900), pp. 37-42.
Notes on the Copper Deposits of the Mt. Perry District. A. Gibb (1901), pp. 109-113.
Ventilation in Shaft of West of Scotland Mine, Gympie. W. Fryar (1902), p. 68.
Hamilton and Coen Fields. W. M. Lee-Bryce (1902), pp. 110-111.
Mines of the Central District. M. Russell (1902), pp. 105-108.
Silver Spur Mine. E. Hall (1902), p. 109.
Mount Perry District in 1902. A. Gibb (1902), pp. 110-111.
The Opal Mining Industry. C. F. V. Jackson (1902), pp. 111-114.

Supplementary Reports (Geological Progress). In Annual Reports. See List under separate heading.

Maps and Plans in Annual Reports—

Peak Downs Copper Mine (Plan of Workings of), by W.H.R. Scale—2 chs. to 1 inch	1889
Queensland (Map of), Illustrating Goldfields and Mining Centres. Scale—44 miles to 1 inch	1894
Etheridge Goldfield (Map of), by T. R. Geraghty. Scale—4 miles to 1 inch	1894
Artesian Water District of Q. (Eastern Margin), by R.L.J. and A.G.M. Scale—16 miles to 1 inch	1894
Woolgar Goldfield—Sketch Showing Principal Reefs. Scale—112 chs. to 1 inch	1895
Ipswich District (Map of), by A.G.M. Scale—½-mile to 1 inch	1895
Desert Sandstone Tableland (Map of), between Palmer and Mossman Waters, by R.L.J. Scale—½-mile to 1 inch ...	1896
Palmer District (Map of), by R.L.J. Scale—2 miles to 1 inch	1897
North-Western Queensland (Geological Map of), by W.E.C. Scale—40 miles to 1 inch	1900

Department of Mines—*continued:*

Publications—*continued:*

Maps and Plans in Annual Reports—continued:

Anakie Sapphire Fields (2 Geol. Maps of), by B.D. Scale—2 miles to 1 inch 1901
Queensland (Geological Sketch Map and Section of). Scale—40 miles to 1 inch 1902
Charters Towers (Lease Plan). Scale—16 chs. to 1 inch ... 1902
Gympie Goldfield (Lease Plan). Scale—700 feet to 1 inch ... 1902
Ravenswood (Plan of Part of). Scale—12 chs. to 1 inch ... 1902
Charters Towers (Lease Plan). Scale—6 chs. to 1 inch ... 1903
Gympie Goldfield (Lease Plan). Scale—15 chs. to 1 inch ... 1903
Croydon—Leases and Reefs at Croydon and Mountain Maid. 1903
Ravenswood Leases (Plan of). Scale—16 chs. to 1 inch ... 1903
Walsh and Tinaroo Mineral Field (Sketch Map of). Scale—3 miles to 1 inch 1903
Queensland (Geol. Map of), by B.D. Scale—40 miles to 1 inch 1903
Charters Towers (Plan of Leases of). Scale—16 chs. to 1 inch 1904
Clermont—Black Ridge Claims. Not to scale. 1904
Gympie—Plan of Leases. Scale—15 chs. to 1 inch 1904
Ipswich, Walloon, and Rosewood Collieries (Plan of). Scale—½-mile to 1 in 1904
Dawson-Mackenzie Coal Areas (Plan of). Scale—8 miles to 1 inch 1904
Queensland Geol. Map of), Showing Mineral Centres. Scale—40 miles to 1 inch 1904
Charters Towers Lease Plan. Scale—16 chs. to 1 inch ... 1905
Charters Towers Provisional Goldfields and Outlying Mining Camps. Scale—8 miles to 1 inch 1905
Stanhills Tinfields (Sketch Map of). Scale—2 miles to 1 inch 1906
Annan Tinfield (Sketch Map of). Scale—120 chs. to 1 inch 1906
Walsh and Tinaroo (Sketch Map Showing Principal Southern Mines). Scale—6 miles to 1 inch 1906
Walsh and Tinaroo (Sketch Map Showing Principal Northern Mines). Scale—4 miles to 1 inch 1906
Cloncurry (Map of), Showing Freeholds and Mineral Leases. Scale—6 miles to 1 inch 1906
Etheridge Goldfield (Sketch Map of). Scale—6 miles to 1 inch 1907
Herberton and Chillagoe Gold and Mineral Fields (Sketch Map of). Scale—6 miles to 1 inch 1908
East Central Queensland Gold, Mineral, and Coal Fields. Scale—4 miles to 1 inch 1907 (1908)
Charters Towers—Principal Fields and Outlying Mining Centres. Scale—8 miles to 1 inch 1910
Blair Athol Mining Leases. Scale—30 chs. to 1 inch 1910
Oaks Goldfield (Sketch Map of). Scale—20 chs. to 1 inch ... 1910
Etheridge Goldfield (Geol. Sketch Map of). Scale—6 miles to 1 inch 1910
Cape York Peninsula Gold and Mineral Fields (Sketch Map of). Scale—6 miles to 1 inch 1910
Charters Towers, Ravenswood, Kangaroo Hills, and Star River (Map Showing Gold and Mineral Fields). Scale—6 miles to 1 inch 1911, 1912

Government Gazette. For all official notifications.

Hansard. For Debates in Parliament.

Votes and Proceedings. For Reports, etc., in Legislative Assembly prior to 1902.

Journals. For Reports, etc., in Legislative Council prior to 1902.

Parliamentary Papers. For Reports, etc., in Legislative Council and Legislative Assembly from 1902.

C. A. Papers. Included in *Votes and Proceedings* or (and) in *Journals* prior to 1902, and in *Parliamentary Papers* from 1902.

Derby Co. Darling Downs Dist. *See map,* Pl. 12.

Derrie Bore. *See under* Artesian Bores. No. 316.

Desert Cr., br. of Lynd R., nr. Fisherton. *Min.Ref.* Scheelite, *see* 7348; Wolfram, 7962.

Desert Sandstone Coal-bearing Strata. Evidence affecting age of. *See* Supplementary Report List, No. 26.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 229.

Devil's Mountain, Gympie. *Min.Ref.* Gold, *see* 4416, 4419, 4548, 4549; Iron Pyrites, 5470; Manganese-dioxide, 6495; Silver, 7543.

Devon Bore. *See under* Artesian Bores. No. 255.

—— Wolfram Mine, 3 miles from Coolgarra. *Min.Ref.* Mispickel, *see* 6736; Wolfram, 8010.

—— and Cornwall Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Devoncourt Lease Sub-artesian Bores. *See under* Artesian Bores. No. 249.

—— Stn. and Malvern Cr. (between), S.S.W. of Cloncurry. *Min.Ref.* Limestone, *see* 619.

Dewalla Bore. *See under* Artesian Bores. No. 169.

Diagonal Group of Copper Mines, Cloncurry. *Includes* Pioneer M.L., A Lone Hand M.L., Diagonal M.F., Prospector M.C., Balfour Extd. M.C. *Min. Ref.* Azurite, *see* 169; Copper Pyrites, 2077, 2078; Gold, 3471; Limonite, 5760-5762; Malachite, 6112-6115; Redruthite, 7219-7222; Tile Ore, 2505-2508.

—— M.F. (2457), S.S.W. of Cloncurry. *Min.Ref.* Malachite, *see* 6113; Redruthite, 7220; Tile Ore, 2506.

Diagrams—statistical. *See* Pls. 47 to 57. *See under* Plates for list.

Diallage. *Var. of* Augite, *which see.*

Dialogite. *Syn.* Rhodochrosite, *which see.*

Diamantina Co. Gregory North Dist. *See map,* Pl. 20.

—— Island. *See under* Port Curtis Islands.

—— R., west of Rockhampton. About *Lat.* 23° 20′ S.; *Long.* 141° 28′ E. *Min. Ref.* Gypsum, *see* 4617; Halite, 4653; Jasper, 5663A; Kaolin, 5684, 5685.

GEOLOGICAL NOTE: The river flows through the Rolling Downs Formation (Lower Cretaceous). Desert Sandstone (Upper Cretaceous), in which opal is found, occurs in the vicinity. *See* G.S.Q. Pub. 217 (Map).

Diamond. *Compo.*, pure carbon. Colourless. *H.* = 10. *Sp.gr.* = 3·5. *See map,* Pls. 11, 13.

NOTE: Diamonds may be considered to be of rare occurrence in Queensland, occasionally being found in the gold drifts of Gilberton, the sapphire drifts of Anakie, and the tin drifts of Stanthorpe. Some clear stones from Stanthorpe have been cut into perfect gems, but others have been returned from the lapidaries only partly faceted, the crystals being too hard to work in the ordinary way. Stones found at Anakie and Gilberton have not been sent to the lapidaries, and so their adaptability for gem-making has not been determined. The Stanthorpe, Gilberton, and Anakie diamonds are nearly all well crystallised in modifications of the octohedron and triakis octohedron, and make good cabinet specimens.

DISCOVERIES: *See under* Discoveries, separate heading.

2573. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Gilbert River, about 50 miles S.E. of Charleston, Etheridge Goldfield. *Co.* Victor; *Dist.* **Cook.** *Ref.* B.D.

2574. ——. *Assoc.with* Gold, Cassiterite, Stannite, Sapphire, Topaz, Zircon, and Amethyst, in alluvial deposits. *Loc.* Broadwater Cr. and its tributaries, Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 31 (1898).

2575. ——. *Assoc.with* yellow, green, blue, and pink Sapphire, Spinel, Beryl, Zircon *var.* Hyacinth, Garnet (red), Tourmaline, Topaz, Amethyst, Cairngorm, Rock Crystal, Cassiterite, and traces of gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot, Sugarloaf, Lode, Arbouin's, Cannon, Kettle Swamp Crs., and Severn R., Stanthorpe (*ante*). *Ref.* G.S.Q. Pub. 120 (1898), and B.D.

2576. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Kettle Swamp Cr. (Blue Mt. Cr.), N.E. and E. of Mt. Marlay, about ½-mile E.N.E. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* B.D.

2577. ——. Junction of Severn River and Quart Pot Cr., ½-mile N.W. of Stanthorpe Rail. Stn. *Co.* Bentinck (*ante*). *Ref.* B.D.

2578. ——. *Assoc.with* Gold, Cassiterite, Topaz, Sapphire, Zircon, Spinel, Garnet, Cairngorm, in alluvial deposits. *Loc.* Spring Cr. and its tributaries, Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 32 (1898).

2579. ——. Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.M.

2580. Diamond. *Assoc.with* Gold, Sapphire, Spinel, Garnet, Zircon, Amethyst, Cairngorm, Chalcedony, Jasper, Rutile, Topaz, Magnetite, Ilmenite, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Creeks, Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton (Central line). *Cos.* Clermont and Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), and 172, p. 20 (1902).

—— Drill Bores. *See under* Gold Bores.

—— Jubilee Reef, 3 miles N. of Georgetown, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3733.

Diana Bore. *See under* Artesian Bores. No. 412.

Diatomaceous earth. *Syn.* Tripolite, *var.* of Opal, *which see.*

Dick (Jas.). Prospecting in the York Penisula. Tour of Mr. Dickie and party. Q.G.M.J., pp. 600-603 (1910).

Dick and Coutt's Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 818.

Dick's Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

Dickie (John), Prospector. Report on Recent Alice R. Gold Discovery. Q.G.M.J., vol. 4, pp. 428, 488 (1903).

Dickie's P.C. Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

Dickisson's Lease, Grass-tree Goldfield. *Min.Ref.* Gold, *see* 4108.

Dickson Co. Kennedy South Dist. *See map*, Pl. 14.

Dickson's Bore. *See under* Artesian Bores. No. 8.

Didcot Cr., 62 miles W. of Maryborough. *Min.Ref.* Ironstone, *see* 5510; Manganese-dioxide, 6396; Minium, 6579.

Diecan Claim, Mt. Emu Plains Stn. *Min.Ref.* Gold, *see* 3561C; Iron Pyrites, 4970A.

Difficulty Reef, Jessop's Hill, Palmer Goldfield. *Min.Ref.* Gold, *see* 3672.

Digger's Cr., Barmundoo (Tableland) Goldfield. *Min.Ref.* Galena, *see* 3037; Gold (alluvial) 3373, (reef) 4235; Iron Pyrites, 5356; Mispickel, 6783; Zinc-Blende, 8181.

Diggers' Luck Mine, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3821.

Diggings Cr., Starcke Goldfield. *Min.Ref.* Gold (alluvial), *see* 3200B.

—— Gully, Seven-mile Diggings. *Min.Ref.* Gold, *see* 4202.

Diglum Cr., Barmundoo Hd. Stn., 30 miles S. of Gladstone. *Min.Ref.* Azurite, *see* 246, 247; Chert, 1413A; Copper Pyrites, 2282; Epidote, 2599; Garnet, 3161; Gold (alluvial) 3374, (reef) 4245; Ironstone, 5617; Limestone, 673; Malachite, 6350, 6351; Mispickel, 6784; Silver, 7515, 7516; Wollastonite, 8045.

GEOLOGICAL NOTE: The rocks comprise slates, limestone, etc., of Gympie Formation intruded by granite. Alluvial gold occurs in the creek, but no reefs have been found. *See* G.S.Q. Pub. No. 162 for notes and map.

—— —— Township, S.byW. of Gladstone. *Min.Ref.* Limestone, *see* 673.

Dillalah Run Bores. *See under* Artesian Bores No. 250.

Dimbullah, 73 miles (by rail) W.S.W. of Cairns (Chillagoe line). *Lat.*, 17° 10′ S.; *Long.*, 145° 7′ E. The Railway Base for the Wolfram Camp Mines, the Hodgkinson Goldfield, and the Northcote Antimony Mines.

Dingo Cr., 30 miles from Kangaroo Hills (?). *Min.Ref.* Cassiterite, *see* 1164.

—— Mountain, S.E. of Mt. Garnet. *Min.Ref.* Wolfram, *see* 7939A.

—— Point., Par. of Jimbour, nr. Dalby. *Min.Ref.* Coal, *see* 1622.

Dinmore, 19 miles (by rail) W.S.W. of Brisbane. *Min.Ref.* Coal, *see* 1736, 1757; Clay, 1580.

GEOLOGICAL NOTE: The rocks in this locality comprise sandstones and shales belonging to the Ipswich Coal Measures (Trias-Jura). They contain good seams of coal, of which many are now being worked. *See* G.S.Q. Pub. No. 204 for details and maps.

—— Coal Bore. *See under* Coal Bores.

Dinmore Colliery, 21 miles (by rail and road) W.S.W. of Brisbane. *Min.Ref.* Clay, *see* 1580; Coal, 1736; Kaolin, 5697.

Dinner Cr., trib. of Lion Cr., nr. Stanwell. *Min.Ref.* Magnesite, *see* 5957; Opal (common), 6997; Orthoclase, 7051.

—— (Samarai) Is., Brit. New Guinea. *Min.Ref.* Mispickel, *see* 6813.

Dioptase. *Compo.*, Silicate of copper. *Colour*, Emerald green. *Streak*, Green. *H.* = 5. *Sp.gr.* = 3·2-3·3.

2581. —— (?). *Assoc.with* Malachite, Atacamite, Chrysocolla, and Tourmaline, in schist. *Loc.* Weka M.C., Eva Group, 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 159 and 160 (1908).

2582. ——. *Assoc.with* Redruthite, Malachite, Chrysocolla, Iron Pyrites, and Limonite, in gossan, turgite, and schist. *Loc.* Trump Extd. M.C. (368), McPhail Group, Florence R., 34 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 73-76 (1908).

2582A. ——. *Assoc.with* Gold, Native Copper, Copper Pyrites, Malachite, Atacamite, Chrysocolla, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 219-224 (1908).

2583. ——. Muldiva, 8 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

2584. ——. Mungana Rail. Stn. (Chillagoe line), 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

Diorite Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4502.

Discoveries.—*See* other Notes under name of locality.

Artesian Water. First successful bore, Barcaldine, 1888.

Anthracite—In 1898 at Dawson R., Central Q'land; 1901 at Hampden, nr. Mackay; 1904 at Pascoe R., N. of Cooktown.

Antimony—In 1872 at Neardie; 1877 at Northcote; 1891 at Cocoa Creek.

Bismuth—In 1888 at Oakey Cr., Biggenden.

Coal—In 1827 at Ipswich; 1843 at Redbank; 1845 at Mackenzie R., near Burngrove Cr.; before 1854 at Moggill; 1854 at Bulimba and Caloundra; 1862 at Bedford's Crossing, Mackenzie R.; 1864 at Blair Athol, Clermont; 1864 at Burrum; 1867 at Howard; 1868 at Jellinbah (Mammoth Seam); 1872 at Little River, near Cooktown; 1876 at Clifton; 1880 at Torbanlea; 1885 at Jimbour (first output); 1882 at Tannymorel; 1887 at Kingsthorpe, Darling Downs; at Stewart's Cr., Townsville; and at Styx River, near St. Lawrence; 1898 at Dawson River (Dunstan Seam); 1904 at Bluff Mine, Central Rail.; 1905 at Pascoe R., N. of Cooktown.

Cobalt—About 1886 at Mt. Cora and Mt. Clara Hills.

Copper—In 1862 at Peak Downs, Clermont; 1867 at Cloncurry and Einasleigh River, Argylla Cr., and Duck Cr., nr. Cloncurry; 1869 at Mt. Perry; 1870 at Mt. Warminster; 1871 at Leichhardt R., Cloncurry; about 1871 at Mt. Flora and Mt. Orange; 1881 at Mt. Oxide, Cloncurry; 1888 at Sundown, Ballandean; 1890 at Silver Spur, Texas; 1893 at Glassford Cr., but first lease was only applied for in 1899; 1895 at New Cannindah; 1896 (?) at Mt. Chalmers; 1898 at Many Peaks; 1902 at O.K.; 1903 at Mt. Hector.

Diamond—In 1872 at Spring Cr., Stanthorpe; 1901 at Policeman Cr., Anakie.

Gold—

1852 at Black Snake G.F. and Lord John's Swamp (gold spec. found). Lucky Valley G.F.

1853 at Calliope G.F. and near Port Curtis.

1856 at Canning Downs (traces of gold).

1857 at Canoona G.F.

1858 at Eidsvold G.F. (?).

1861 at Peak Downs G.F. (Clermont).

1862 Calliope G.F. (opened).

1863 at Canal Cr. G.F., Cawarral G.F., Expedition Cr. nr. Clermont, and Talgai G.F.

1864 at Hurley's, Clermont.

1865 at Crocodile Cr. G.F., Daisy Cr. (trib. of Dee R.), Gabriel's Gully, Gavial Cr., and Springs Lead nr. Clermont.

1866 at McDonald's Flat nr. Clermont, Morinish G.F., and Ridgelands G.F.

1867 at Blackfellow's Gully, Cloncurry G.F., Gympie G.F., Herbert's Cr., Gogango, Langmorn G.F., Marodian G.F., Raglan G.F., and Rosewood G.F.

1868 at Cape River G.F., Enoggera G.F., Mt. Wheeler, Mt. Wyatt G.F., New Zealand Gully, Ravenswood G.F., and Thane's Cr. G.F.

1869 at Gilbert R.

1870 at Cania and Kroombit G.F., Chowey G.F., Bishop's Cr., Cloncurry G.F., Garibaldi Diggings, Mt. Chalmers, and Mt. Warminster.

1871 at Etheridge G.F., Marengo Diggings, and Milton (Norton) G.F.

1872 at Charters Towers and Normanby (Bowen) G.F.; Palmer G.F. (first discovery).

Discoveries—*continued:*

Gold—*continued:*

1873 at Fisher's Cr. at Cloncurry, Miclere at Clermont, and Palmer G.F. (payable gold and first rush).
1874. Further discoveries at Palmer G.F. (second rush).
1875 at Hodgkinson G.F.
1876 at Coen G.F.
1877 at Mt. Shamrock Mine, Pikedale G.F. (reef found), and Yatton G.F.
1879 at Mulgrave G.F., Reid's Cr. G.F., and Thane's Cr. (reef found).
1880 at Boolboonda G.F
1881 at Nebo (Mt. Britton) G.F.
1882 at Mt. Morgan Mine and Leyburn G.F.
1885 at Croydon G.F., Stanton-Harcourt G.F., and Taranganba G.F.
1886 at Brovinia G.F., Grass-tree G.F., Glastonbury G.F., Rannes G.F. (Kaufman Diggings), and Mt. Shamrock.
1887 at Barmundoo (Tableland) G.F. and Russell G.F.
1888 at Bompa G.F., Gebangle Gold Mines, and Woodlark Is.
1889 at Paradise G.F.
1890 at Starcke G.F.
1891 at Agate Downs G.F.
1892 at Yorkey's G.F.
1893 at Ulam G.F. and Mareeba G.F.
1894 at Horn Is. G.F. and Windsor G.F.
1895 at Balcooma G.F. and Mt. Success.
1896 at Green Hills G.F.
1898 at Jordan Cr. G.F. and Gaeta G.F.
1899 at Hamilton G.F.
1900 at Targinnie.
1902 at Percy G.F.
1903 at Dee R.
1904 at Alice R. G.F.
1905 at Carrington G.F. and Macdonald Prov. G.F.
1907 at Oaks G.F.
1909 at Hayes Cr. Prov. G.F.
1911 at Gold Top Prov. G.F.

Manganese—In 1895 at Mt. Miller; 1908 at Pie Cr., nr Gympie.

Mercury—About 1872 at Mt. Perry; about 1876 at Kilkivan.

Meteorites—*See under* separate heading.

Molybdenite—1892 at Bamford; 1894 at Wolfram Camp.

Monazite—In 1904 in alluvial tin deposits at Emu Cr., nr. Fossilbrook, and in wolfram lodes at Bamford, Nettles Creek, and Emuford.

Opal—In 1872 at Listowell Downs, Springsure; 1873 at Bulloo R.; 1885 at Bull's Cr.; 1888 at Cunnavalla, Horse Cr., and Opalton; 1893 at Lushington (Paroo Opal Field); 1894 at Kynuna; 1897 at Koroit.

Platinum—In 1869 at Brickfield Gully, Gympie; 1888 (?), Russell River.

Ruby—About 1878 at Anakie.

Sapphire—In 1870 at Anakie.

Silver—In 1879 at Ravenswood; 1881 at Argentine (Star R.), and Newelton; 1884 at Montalbion; 1888 at Ballandean; 1890 at Silver Spur Mine, Texas.

Tin—

1854 at Stanthorpe.
1872, opening up of Stanthorpe Mineral Field.
1875 at Running Cr., Kangaroo Hills.
1879 at Cannibal Cr., Palmer G.F., and Herbert R., Herberton.
1880 at Dry R., Prospector's Gully, Herberton.
1881 at Nettle's Cr., Coolgarra.
1883 at Deep Lead, Herberton.
1885 at Annan R. Tinfield, Bloomfield R.
1886 at Mt. Spurgeon.
1887 at Pascoe R., Bowden M.F.
1888 at Koorboora Tin Lode, Chillagoe Mineral Field.
1895 at Newelton, in Lancelot Tin Mine.
1901 at Smith's Cr., Herberton M.F.

Wolfram—In 1892 at Bamford and at Pascoe River (Bowden Mineral Field); 1894 at Wolfram Camp, Hodgkinson G.F.; 1899 at Ollera Cr., Seaview Range; 1900 at Rosedale by Joseph Taylor.

Discovery of New Goldfields. *See under* Rewards for, etc.

Dismal Cr. Rises 50 miles N.byW. of Cloncurry, and flows into the Cloncurry R., 110 miles N.byE. of Cloncurry. Length about 65 miles. *Min.Ref.* Chalcedony, *see* 1336A; Garnet (Andradite), 3156; Porcellanite, 5660A.

Dispute M.L. (696), Cloncurry. *Min.Ref.* Limonite, *see* 5741; Malachite, 6070.

District Boundaries. *See* General State Map, Pl. 1.

District Maps. *See maps,* Pls. 2 to 21.

Districts of the State. The State is divided into the following fifteen districts, the areas being given in square miles:—

Burke	102,161	Leichhardt ...	48,354
Burnett	12,457	Maranoa	39,235
Cook	99,378	Mitchell	55,362
Darling Downs ...	25,390	Moreton	8,828
Gregory North ...	84,791	Port Curtis ...	14,054
Gregory South ...	49,403	Warrego	58,334
Kennedy North ...	34,114	Wide Bay ...	8,128
Kennedy South ...	30,514		

Islands make up additional areas. There are 503 sq. miles attached to Burke, 397 sq. miles to Cook, 349 sq. miles to Kennedy North, 315 sq. miles to Kennedy South, 274 sq. miles to Moreton, 316 sq. miles to Port Curtis, and 666 sq. miles to Wide Bay, the area of the whole of the islands being 2,540 sq. miles.

The total area of the State, exclusive of islands, is 670,500 sq. miles (429,120,000 acres). With the islands included, the area is 673,040 sq. miles (430,745,600 acres).

The Districts embrace 319 counties, for details of which *see under* names of Districts. *See also* Plates 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20.

Many references are given in *official* reports to "districts" which have no connection whatever with the official classification above, and may be taken to be synonymous with "environments"—Gladstone "District" and Rockhampton "District" are examples of this irregularity.

Divided Is., Keppel Bay. *Min.Ref.* Turquoise, *see* 7911.
GEOLOGICAL NOTE: *See under* Keppel Bay Islands.

Dixon, Par. of (Por. 38), 13 miles E. of Esk Rail. Stn. *Min.Ref.* Copper ore, *see* 2045.

—— —— (Por. 140), 13 miles E. of Esk. *Min.Ref.* Azurite, *see* 243; Copper Pyrites, 2280; Hematite, 4777; Iron Pyrites, 5345; Malachite, 6348; Serpentine, 7390.

Dixon (Russell).

GEOLOGICAL SURVEY PUBLICATIONS—

(*See* list under "Geol. Survey" for details.)

135. Index to Names of Places, Mines, Reefs, etc., occurring in Geological Survey Reports, from No. 1 to No. 134, inclusive, 1901.
178. Index No. 2 to Names of Places, Mines, Reefs, etc., occurring in Geological Survey Reports, from No. 136 to No. 177, inclusive, 1902.
197. Index (No. 3) to Publications Nos. 177 to 196, inclusive, being Vol. I. of New Series, 1905.
214. Index (No. 4) to Publications Nos. 198 to 213, inclusive, being Vol. II. of New Series, 1908.
227. Index (No. 5) to Publications Nos. 215 to 226, inclusive, being Vol. III. of New Series (in preparation).

Dixon's Cr., br. of Lynd R. *Min.Ref.* Cassiterite, *see* 832; Molybdenite, 6829; Wolfram, 7939.

—— Paddock, Croydon Goldfield. *Min.Ref.* Opal (common), *see* 6972.

Dobbies Seam (Bonnie Dundee Colliery), Bundamba. *Min.Ref.* Coal, *see* 1732.

Dobbyn Group of Copper Mines, Cloncurry. *Includes* Dobbyn M.Fs. 1S., 1N. Leases, Bauhinia M.C., Widow M.C., Elsie M.C., Nil Desperandum M.C., Glenferrie P.A., Flaneur M.L., and others. *Min.Ref.* Calcite, *see* 468; Chrysocolla, 1511A1; Copper Pyrites, 2105-2107; Cuprite, 2411A; Ferro-Calcite, 575; Ironstone, 5504A; Limonite, 5807-5811; Malachite, 6166-6173; Redruthite, 7258-7261; Tile Ore, 2530.

—— M.F. (2551), Cloncurry. *Min.Ref.* Limonite, *see* 5807A; Malachite, 6167.

—— 1 N. M.L. (679), Cloncurry. *Min.Ref.* Ironstone, *see* 5504A; Malachite, 6168.

—— 1 S. M.L. (662), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2106; Limonite, 5808; Malachite, 6169; Redruthite, 7259.

Dobbyn's Cr., Leichhardt R., Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3185.

Dobu (Goulvain) Is., D'Entrecasteaux Group, Brit. New Guinea. *Min.Ref.* Siliceous Sinter, *see* 7023A; Native Sulphur, 7669.

Doctor's Lode, Sel. (39), Jibbinbar. *Min.Ref.* Copper Pyrites, *see* 2181; Galena, 2829; Mispickel, 6709; Zinc-Blende, 8095.

—— Reef, McDonald's Flat, Clermont. *Min.Ref.* Gold, *see* 4163.

Dodd's Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4503.

—— ——, Hayes Cr., Prov. Goldfield. *Min.Ref.* Gold, *see* 3827.

—— Tin Mine, Annan R., Tinfield. *Min.Ref.* Cassiterite, *see* 784; Chlorite, 1429; Mispickel, 6666; Tourmaline, 7841.

Dodger's Flat, The Springs, Clermont. *Min.Ref.* Gold (alluvial), *see* 3338, 3351.

Dog-leg Gully, Calliope Goldfield. *Min.Ref.* Gold (alluvial), *see* 3382.

Dog-tooth Spar. *Var.* of Calcite, *which see.*

Dolcoath Cr., Stanthorpe. *Min.Ref.* Beryl, *see* 292; Cassiterite, 981-982; Molybdenite, 6848; Wolfram, 7984, 7985.

—— Flat Tin Mine, Dolcoath Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 982.

Dolly Brand Mine, 1 mile from Chillagoe. *Min.Ref.* Cerussite, *see* 1194A; Galena, 2790A; Massicot, 6526A.

Dolly's Cr., Emu Vale, E. of Warwick. *Min.Ref.* Kaolin, *see* 5682.

Dolomite. *Syn.* Bitter Spar. Magnesian Limestone. *Compo.*, Carbonate of lime and magnesia. *Colour*, usually white. *H.* = 3·5-4. *Sp.gr.* = 2·8-2·9. *Contents* (*max.*), Lime 30 per cent., Magnesia 21 per cent.

Geological Note: Deposits of dolomite occur at Flinders and Antony on the Fassifern Railway line, about 40 miles from Brisbane. They form irregular masses where basalt dykes have penetrated coal measures, appear to be of great extent, and are normal in their proportion of magnesia and lime.

2584A.——. In irregular masses. *Assoc.with* basalt. *Loc.* Between $\frac{1}{2}$ and 4 miles S. of Flinders Rail. Stn., Fassifern Rail. Line, 39 miles from Brisbane. *Co.* Churchill; *Dist.* Moreton. *Ref.* B.D. *Analyses:* Selection 102—Moisture, ·2; loss on ignition, 43·9; silica, 4·2; iron, 0·8, alumina, 2·1; lime, 28·6; magnesia, 19·9 = 99·7 per cent. Selection 100—Moisture, ·4; loss on ignition, 42·5; silica, 6·5; iron, 0·9; alumina, 4·5; lime, 28·4; magnesia, 16·7 = 99·9 per cent. Selection 100 (in hole)—Moisture, ·8; loss on ignition, 40; silica, 11·7; iron, 1·2; alumina, 3·8; lime, 26·1; magnesia, 16·1 = 99·7 per cent. Selection 17—Moisture, 1·2; loss on ignition, 38·8; silica, 14·8; iron, 1·3; alumina, 1·3; lime, 24; magnesia, 18·4 = 99·8 per cent.

2585. ——. Biggenden Mine, nr. Biggenden, $4\frac{1}{2}$ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* B.D.

2586 ——. *Assoc.with* Ankerite, in breccia. *Loc.* Mt. Shamrock Mine, $5\frac{1}{2}$ miles W.N.W. of Degilbo, 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 168, p. 6 (1901).

2587. ——. California Creek, nr. Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 65 (1900).

2588. ——. *Assoc.with* Gold, Iron Pyrites, Siderite, and Magnesite, in quartz. *Loc.* Biddy Walsh Reef, McDonald Flat Road, 3 miles S.S.E. of Clermont Rail. Stn. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 176, p. 18 (1902).

2589. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Limestone Hill, Gowrie Cr., The Springs, 11 miles N.N.W. of Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 201, p. 19 (1906).

2589A.——. As nodules in volcanic soil. *Loc.* Majenta Station, 8 miles E. of Capella Rail. Stn. (Clermont line). *Co.* Talbot; *Dist.* Leichhardt. *Analysis:* 30 per cent. Lime; 18 per cent. Magnesia. *Ref.* B.D.

2590. ——. *Assoc.with* Gold, Galena, and Zinc-Blende, in quartz reef. *Loc.* Annie Mine, Cawarral Goldfield, 23 miles (by rail) N.N.E. of Rockhampton, on Emu Park line. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* G.S.M. and G.S.Q. Pub. 125, p. 28 (1897).

Don Cr. Sub-Artesian Bore. *See under* Artesian Bores. No. 381.

—— (Dawn) R., S. of Bowen. *Min.Ref.* Anglesite, *see* 43; Amethyst, 7169A, 7169B; Chalcedony, 1345A; Copper Pyrites, 2238; Galena, 2954; Garnet, 3160A; Gold (alluvial), 3273A, 3273C; Jasper, 5642A; Limestone, 653A; Lydianstone, 5654A; Magnetite, 6055; Sapphire, 2353A; Zircon, 8221A.

—— Jon Bismuth Mine, nr. Mt. Havilah. *Min.Ref.* Argentite, *see* 93; Azurite, 177; Bismuth, 318; Bismuth (native), 326A; Bismuthinite, 359-361; Calcite, 478, 479; Copper Pyrites, 2134, 2135; Garnet, 3157, 3162; Gold, 3600, 3601; Hematite, 4698; Iron Pyrites, 5000; Ironstone, 5514; Limestone, 626; Magnetite, 5979-5980; Malachite, 6201; Mispickel, 6658; Silver, 7437; Tetradymite, 7746.

—— Juan Mine, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

Donaldson, N.byW. of Cloncurry. *Includes* Eclipse Group of Copper Leases. *Min.Ref.* Copper Pyrites, *see* 2069; Limonite, 5749; Malachite, 6091; Redruthite, 7209, 7210; Tile Ore, 2494.

Doncaster Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 174, 379.

Donelley's Bore. *See under* Artesian Bores. No. 401.

—— Sel. (39v), Paynter's Cr., Blackall Range. *Min.Ref.* Coal, *see* 1711.

Donnickmore Bore. *See under* Artesian Bores. No. 157.

Donnor's Hill Station Bore. *See under* Artesian Bores. No. 251. *Min.Ref.* Coal, *see* 1597A.

Donnybrook, Etheridge Goldfield. *See* Donnyville Mg. Centre.

—— Colliery, North Ipswich Coal Area. *Min.Ref.* Coal, *see* 1737.

—— Mg. Centre, Ravenswood Goldfield. Reefs:—Alexandra, Day Dawn, Donnybrook, Columbia, Erin's Hope, Perseverance, etc. *Min.Ref.* Galena, *see* 2924; Gold, 4008-4011; Iron Pyrites, 5235, 5236; Mispickel, 6745; Zinc-Blende, 8147.

—— Reef, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2924; Gold, 4008; Zinc-Blende, 8147.

Donnyville Mg. Centre, Etheridge Goldfield. Reefs:—Albert, Black Diamond, Brandy Smash, City of Glasgow, Comet, Eclipse, Home Rule, Ironclad, Marchioness, Overland Route, Parnell, etc. *Min.Ref.* Anglesite, *see* 21D; Cerussite, 1190B; Galena, 2751A; Gold, 3725; Malachite, 6215B; Silver, 7449C.

Doolbi Sub-artesian Bore. *See under* Artesian Bores. No. 210.

Dorothy Copper Mine, 24 miles E. of Georgetown. *Min.Ref.* Copper Ore, *see* 2025B; Galena, 2759B.

—— —— ——. 1½ miles S.E. of Mungana Rail. Stn. (Chillagoe line). *Min.Ref.* Azurite, *see* 197; Calcite, 484A; Chrysocolla, 1519; Copper Pyrites, 2174; Cuprite, 2437; Fluorspar, 2665, 2665A; Garnet, 3110, 3159; Malachite, 6235; Redruthite, 7280.

Dot Reef, Magnetic Is., Cleveland Bay. *Min.Ref.* Gold, *see* 3997.

Dotswood Bore. *See under* Artesian Bores. No. 347.

Double-barrel Cr. (Manton Rail. Stn.). *See maps,* Plates 16, 17. *Min.Ref.* Calcite, *see* 501; Garnet, 3123; Graphite, 4598; Iron Pyrites, 5225; Ironstone, 5550; Limestone, 720; Magnetite, 6010; Malachite, 6286; Marble, 585.

Double Island. *See under* Keppel Bay Islands.

Double Island Point (1 mile S. of), S. of Wide Bay. *Min.Ref.* Fulgurites, *see* 2867A. *Rainfall: See under* separate heading.

—— Swamp Bore. *See under* Artesian Bore. No. 337.

Douchang Copper Lode. *See under* MacFadzen's M.F., 1749.

Doughboy Cr., Bower-bird Goldfield. *Min.Ref.* Gold, *see* 3459.

Douglas's Bore. *See under* Artesian Bores. No. 334.

Douglas Co., Burke Dist. *See map*, Plate 20.

—— Cr. Small Cr., flowing into Drummond Cr., 5 miles S.S.W. of Clermont. *Min.Ref.* Limestone, *see* 662.

—— ——. Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

—— ——. Kangaroo Hills Min. Field. *Min.Ref.* Cassiterite, *see* 1153; Hematite, 4747; Iron Pyrites, 5280; Limonite, 5880; Malachite, 6301.

—— ——. Gold Lease, Jordan Cr. Goldfield. *Min.Ref.* Gold, *see* 3769.

——. Clermont and Drummond Crs. (in gullies between), Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3330.

—— and Drummond Crs., 4 miles S.E. of Copperfield (3 miles below the junction of). *Min.Ref.* Limestone, *see* 661.

—— Tin Mine, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1158.

—— —— ——. Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 766; Chlorite, 1420.

Downfall Bore. *See under* Artesian Bores. No. 313.

—— Cr. Flows S.W. into Cooranga Cr., 30 miles N.N.W. of Dalby. *Min.Ref.* Travertine, *see* 748.

Downman's Bores. *See under* Coal Bores.

—— Sel. 68 [63], ½ mile E. of Logan Village Rail. Stn. *Min.Ref.* Coal, *see* 1763.

Downpatrick Reef, Jessop's Hill, Palmer Goldfield. *Min.Ref.* Gold, *see* 3672.

—— ——, Northcote, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3761.

Doyle's Sub-artesian Bore. *See under* Artesian Bores. No. 349.

Dozzler Copper Lode. *See under* MacFadzen's M.F., 1749.

Drafting Yard Bore. *See under* Artesian Bores. No. 432.

Drake Co. Kennedy South Dist. *See map*, Pl. 14.

Dreadnought M.L. (452), Cloncurry. *Min.Ref.* Chalcedony, *see* 1338; Iron Pyrites, 4969; Jasper, 5635; Limonite, 5821.

—— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 894; Felspar, 2634; Garnet, 3103; Wolfram, 7950.

Dream Extended Gold Mine, Bompa Goldfield. *Min.Ref.* Gold, *see* 4246.

Dredges (mining) in Queensland (1912).
Cania Gold Dredge.
Clermont Gold Dredge (dismantled).
Crocodile Cr. (nr. Rockhampton) Gold Dredge (removed to Cania).
Dalcoath (Stanthorpe) Tin Dredging Co.
Rover, or Four-mile Cr. (Stanthorpe), Tin Dredge.
Beverley Tin Dredge, Stanthorpe.
Horse Shoe Tin Dredge, Spring Cr., Stanthorpe.
Lode Creek Tin Dredge, on trib. of Sugarloaf Cr., Stanthorpe.
Red Hill Tin Dredge, Lode Creek, nr. N.S.W. border, Stanthorpe.
Stanthorpe Co.'s Tin Dredge, Blue Mt. Creek, Stanthorpe.

NOTE.—For further references to Stanthorpe Dredges, *see under* Stanthorpe.

Dreghorn Diggings, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2241; Galena, 2955; Gold, 4081-4084; Hematite, 4743; Iron Pyrites, 5277, 5278.

Drinan's Gorge. *See under* Artesian Bores. No. 395.

Drummond Co. Kennedy South Dist. *See map*, Pl. 14.

—— Cr., E. of Copperfield, nr. Clermont. *Min.Ref.* Gold (alluvial), *see* 3329.

Drummond Range, N.W. of Clermont. About *Lat.* 23° 59′ S.; *Long.* 147° 10′ E. *See maps*, Pls. 14, 15. *Min.Ref.* Gold (alluvial), *see* 3291.

GEOLOGICAL NOTE: The rocks on the Range are made up of sandstones belonging to the Star Formation (Permo-Carboniferous), some of the peaks of the Range being capped with basalt.

——, Douglas, and Clermont Crs. (in gullies between), Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3330.

—— and Douglas Crs. (3 miles below junction of), 4 miles S.E. of Copperfield, nr. Clermont. *Min.Ref.* Limestone, *see* 661.

Drury Co. Kennedy South Dist. *See map*, Pl. 14.

Dry Creek Sub-artesian Bore. *See under* Artesian Bores. No. 131.

Dry R. Mining Centre. *See also under* Newellton.

Situation: *See maps*, Pls. 16, 17, 22. Branch of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton. *Co.* Cardwell; *Dist.* Kennedy North. Centre about *Lat.* 17° 30′ S.; *Long.* 145° 20′E.

Population: 79 (estimated 1910).

Mineral References: Silver (Argentite), 98. Lead (Anglesite), 39; (Cerussite), 1219-1223; (Galena), 2849-2861; (Linarite), 5937, 5938; (Massicot), 6533-6537; (Minium), 6596, 6597. Copper (Azurite), 211; Chalcanthite), 1328; (Copper Carbonate), 1910, 1911; (Copper Pyrites), 2210; (Malachite), 6280, 6281; (Tile Ore), 2562. Tin (Cassiterite), 1063, 1063A. Antimony (Stibnite), 7639, 7640. Zinc (Calamine), 442; (Zinc-Blende), 8109, 8110. Iron (Iron Pyrites), 5138; (Ironstone), 5546; (Marcasite), 6506; (Siderite), 7408. Other Minerals—Fluorspar, 2668; Topaz, 7799.

Geological Note: The country about the Dry River consists principally of altered sedimentary rocks. They contain numerous deposits of tin, silver, copper, and lead. *See* G.S.Q. Pubs. Nos. 13, 48, 119 for details.

Geological Publications: Reports—Nos. 13 (1883), 31 (1886), 48 (1888), 119 (1897). Map No. 220 (1909). *See* Geol. Surv. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Herberton.

Dry and Wild Rivers (junction of), 13 miles S.S.W. of Herberton. *Min.Ref.* Stibnite, *see* 7640.

Dryfesdale, Glastonbury. *Min.Ref.* Pyrolusite, *see* 7133.

Duan (Normanby) Is., D'Entrecasteaux Group, Brit. New Guinea. *Min.Ref.* Cinnabar, *see* 1564; Gold (alluvial), 3421; Iron Pyrites, 5473.

Duaringa, 65 miles (by rail) W.S.W. of Rockhampton. *See* Pl. 34. *Lat.*, 28° 38′ S.; *Long.*, 149° 39′ E. *Min.Ref.* Coal, *see* 1693; Oil-bearing Shale, 6914; Jasper, 5651; Kaolin, 5693.

Geological Note: The rocks in the immediate vicinity are sandstones and clays belonging to the "Desert Sandstone" (Upper Cretaceous). To the west there are exposures of Dawson-Mackenzie coal measures (Permo-carboniferous), and a continuation of these rocks probably exists below the "Desert Sandstone" about Duaringa. *See* G.S.Q. Pub. No. 155 for details and map.

—— Bore, nr. Duaringa Rail. Stn. *Min.Ref.* Coal (lignite), *see* 1693; Oil-bearing Shale, 6914. *See also under* Coal Bores.

Dublin Co., Maranoa Dist. *See map*, Pl. 12. *See also under* Artesian Bores, No. 252.

Duchess Gold and Mineral Field—

Situation. *See map*, Pls. 20, 21, 23. On Burke River, about 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. Embraces the town of Mairindi.

Proclamation of Field: First and only one, July, 20th, 1912. Now included, by proclamation of 9th January, 1913, in the Cloncurry Gold and Mineral Field, *which see*.

Area: 9 square miles (5,760 acres).

Mineral References: *See under* Duchess Group of Copper Mines.

Duchess Group of Copper Mines, Cloncurry. *Includes* Duchess, Ivanhoe, Wild MacGregor, Maude A, and Revenue M. Leases. *Min.Ref.* Azurite, *see* 205; Bornite, 420; Calcite, 492; Copper Pyrites, 2199, 2200; Cuprite, 2447, 2448; Epsomite, 2614; Limonite, 5860, 5861; Malachite, 6255A-6258; Redruthite, 7285; Tetrahedrite, 7769; Tile Ore, 2552.

—— M.L. (275), Cloncurry. *Min.Ref.* Bornite, *see* 420; Calcite, 492; Cuprite, 2447; Copper Pyrites, 2199, 2200; Epsomite, 2612; Limonite, 5860; Malachite, 6255A-6257; Redruthite, 7285; Tetrahedrite, 7769; Tile Ore, 2552.

—— Reef, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4051.

—— ——, Flanagan's, Croydon Goldfield. *Min.Ref.* Galena, *see* 2710; Gold, 3502; Iron Pyrites, 4946.

Duck Cr., trib. of Cloncurry R., rises about 29 miles S.W. of Cloncurry, flows S.E. into the Cloncurry R., 27 miles S.byW. of Cloncurry. About *Lat.* 20° 56′ S.; *Long.* 140° 12′ E. *Includes* Ready Rhino, Boomerang, Daisy, Tharsis, Belfast, Pioneer Chief, Diagonal, Columbiad, Chinaman, Eva, White Oxide, Alice, and Tambourine Groups of Copper Mines, *which see*. *Min.Ref.* Azurite, *see* 161; Chlorite, 1421; Chrysocolla, 1497; Copper carbonate, 1876; Copper (native), 1982; Copper ore, 2017; Copper Pyrites, 2094-2096; Epidote, 2591; Gold, 3470; Göthite, 4562; Hematite, 4688; Iron Pyrites, 4929; Limonite, 5750-5764, 5784-5787, 5789-5791; Malachite, 6093-6121, 6141-6153, 6158A; Redruthite, 7211-7227, 7242-7252; Siderite, 7402; Stibnite, 7604; Tenorite, 7710; Tetrahedrite, 7756; Tile Ore, 2496-2513, 2520-2527, 2529A; Tourmaline, 7814, 7815; Turgite, 7782-7784.

Smelting Works: *See under* Smelting Works in Queensland.

Duck Creek Opal Field—

Situation: *See maps*, Pls. 18, 19, on Yowah Cr., 77 miles N.W.byW. of Cunnamulla Rail. Stn. (Western line), in the Paroo Mineral Field. *Co.* Humeburn; *Dist.* Warrego. Centre about *Lat.* 17° 25′ S.; *Long.* 144° 28′ E.

Principal Mining Centres: New and Old Fields, and Sheep Station Creek, *which see*.

Mineral Statistics: Opal. *See tables*, Pls. 44, 46, 46A, given *under* Paroo Mineral Field.

Mineral Reference: Opal (precious), *see* 6955.

Geological Note: *See under* Paroo Mineral Field.

Geological Publication: Report—No. 177 (1902). *See under* Geol. Sur. Pub. List for title.

Warden (acting) stationed at Cunnamulla. Inspector of Mines stationed at Gympie.

Duck and Chinaman's Crs. (between), Cloncurry. *Min.Ref.* Psilomelane, *see* 7079.

—— Holes. *See under* Artesian Bores. No. 162.

Dudley Colliery, Burrum Coalfield, N. of Maryborough. *Min.Ref.* Coal, *see* 1806A.

Dudley Colliery, Karrabin, 3 miles W. of Ipswich. *Min.Ref.* Coal, *see* 1727A.

Duffer Bores. *See under* Artesian Bores. No. 324.

—— Gully, "The Spring," Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3341.

—— Rush Diggings, Gobango Cr., S.E. of Kilkivan. *Min.Ref.* Copper, *see* 1860; Gold (alluvial), 3194, (reef) 3624; Mercury, 6551.

Duffey's Mail, Blue Mountain, S.W. of Mackay. *Min.Ref.* Azurite, *see* 229; Galena, 3007; Iron Pyrites, 5298; Malachite, 6319.

Dugald R. Mining Centre, Cloncurry. Centre about *Lat.* 19° 45′ S.; *Long.* 140° 40′ E. *Includes* Una, Lady Clayre, Longamundi, and Cabbage Tree Groups of Copper Mines, *which see*. *Min.Ref.* Antimony, *see* 68; Calcite, 447; Copper carbonate, 1868-9; Copper (native), 1971-1973; Cuprite, 2378-2381; Garnet, 3150; Gold, 3451; Graphite, 4570; Hematite, 4667; Ironstone, 5480, 5481; Limestone, 615; Limonite, 5741-5744, 5746; Malachite, 6070-6075, 6077; Massicot, 6516; Minium, 6575; Redruthite, 7203, 7204; Silver, 7424; Tenorite, 7707; Tile Ore, 2492, 2493.

—— Mine, Dugald R., Cloncurry. *Min.Ref.* Antimony, *see* 68; Calcite, 447; Copper carbonate, 1868; Copper (native), 1971, 1972; Cuprite, 2378, 2379; Graphite, 4570; Hematite, 4667; Massicot, 6516; Minium, 6575; Redruthite, 7203; Silver, 7424; Tenorite, 7707.

—— and Argylla Waters (on divide between), Cloncurry. *Min.Ref.* Manganese-dioxide, *see* 6386.

Dugandan, 59 miles S.S.W. of Ipswich (Fassifern line). *Lat.*, 27° 53′ S.; *Long.*, 152° 43′ E. *Min.Ref.* Calcite, *see* 525; Clay Ironstone, 1590; Turgite, 7901.

Duke Group of Islands, St. Lawrence. *Includes* Iron Is., Hunter Is., Marble Is., and Morton Is., *which see*. *Min.Ref.* Chlorite, *see* 1468; Hematite, 4794; Ironstone, 5625; Limestone, 687-689, (fossiliferous) 735; Magnetite, 6048, 6049; Marble, 597-601.

—— of Brittany, Raglan Goldfield. *Min.Ref.* Gold, *see* 4296.

—— of York Lease (7), Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3665.

Dulacca Town Sub-artesian Bore. *See under* Artesian Bores. No. 91.

Dulbydilla Sub-artesian Bore. *See under* Artesian Bores. No. 75.

Dulhunty Co. Cook Dist. *See map*, Pl. 8.

Dunbar Bores. *See under* Artesian Bores. Nos. 58, 341.

—— Co.; Cook Dist. *See map*, Pl. 8.

Duncan's Sel., nr. Lilymere Lagoon. *Min.Ref.* Coal, *see* 1792

Dundas, 16 miles N.N.W. of Ipswich. *Min.Ref.* Gold, *see* 4217B; Hematite, 4777A; Silver, 7508A.

Dundee (Dudley) Colliery, Burrum Coalfield. *Min.Ref.* Coal, *see* 1806A.

—— Copper Mines (Old), Dee R. *Min.Ref.* Epidote, *see* 2607; Copper Pyrites, 2314A.

—— Road, nr. Westwood, S.W. of Rockhampton. *Min.Ref.* Calcite, *see* 546.

Duneira Bore. *See under* Artesian Bores. No. 170.

Dunganweate Lagoon. *See* Water Analysis (Table of). Nos. 455, 457, 458, 461, 462.

Dungeness. *See* Lucinda Point.

Dunn's Gully, Talgai Goldfield. *Min.Ref.* Gold (alluvial), *see* 3254; (nugget), 3439.

—— Tunnel Mine, Dry R., br. of Wild (Upper Herbert). R. *Min.Ref.* Copper carbonate, *see* 1910; Galena, 2850.

Dun's Gully, Talgai Goldfield. *Min.Ref.* Gold (alluvial), *see* 3252.

Dunraven Bore. *See under* Artesian Bores. No. 155.

Dunstan (B.), Govt. Geologist of Queensland.

(*See* list under "Geol. Survey" for details.)

Geological Survey Publications—	Year.
127. On Mount Clifford and other Mines near Anakie	1898
130. On the Geology of Rodd Peninsula, Port Curtis	1898
131. On the Mesozoic Coal Measures of Stanwell and Associated Formations	1898
141. On the Geology of Collaroy and Carmilla, near Broad Sound, with notes on Mining Operations and the Mineral Resources of the Districts	1898
143. Annual Progress Report of the Geological Survey for the Years 1896-8	1899
148. On the Permo-Carboniferous Coal Measures of Clermont and Associated Formations	1900
149. Bulletin No. 11. Geological Features of the Country between Warren and Mount Lion, in the Rockhampton District ...	1900
150. Annual Progress Report of the Geological Survey for the Year 1899	1900
155. On the Geology of the Dawson and Mackenzie Rivers, with Special Reference to the Occurrence of Anthracite Coal ...	1901
159. Annual Progress Report for the Year 1900	1901
161. Bulletin No. 15. Report on some Mount Morgan Mines ...	1901
162. Bulletin No. 16. Report on the Geological and Mineral Features of Diglum Creek, Barmundoo, Gladstone District, with remarks on the Paragenesis of some of the Rock-forming Minerals	1901
164. Bulletin No. 17. Report on the Geological Features of Hazledean, with notes on the Coal, Limestone, and other Mineral Products of the Mackay District	1901
172. On the Sapphire Fields of Anakie	1902
175. Annual Progress Report for the Year 1901	1902
176. On the Clermont Goldfield, with a Description of Dry Blowers, etc.	1902

Dunstan (B.), Govt. Geologist of Queensland—*continued:*

Geological Survey Publications—*continued:* Year.

190. Records No. 1. (i.) Notes on the Testing of Queensland Coal. (ii.) On the Occurrence of Gold Nuggets at the Dee River, near Mount Morgan. (iii.) Phosphate-bearing Rocks in the Rockhampton District. (iv.) The Iron Bonus Commission—Evidence taken in Queensland. (v.) Notes on Asbestos in the Rockhampton District. (vi.) On the Geological History of Keppel Bay. (vii.) Oriental Rubies in the Tate River, near Chillagoe 1904

195. Moonmera (near Mount Morgan). Its Minerals and Copper Mines, and a Study of its Rock Formations 1904

196. Records No. 2, with other Notes. (i.) Gold Deposits near Mount Ubi, west of the Blackall Range. (ii.) The Ironstone of Mount Lucy, Chillagoe District. (iii.) Testing Samples for Prospectors. (iv.) Monazite in Queensland. (v.) A Soil Survey for Queensland. (vi.) Boring for Coal near Townsville. (vii.) The Testing of Queensland Coals. (viii.) Mineral Notes; Agate, Little River; Gypsum Twin Crystals Eukalunda; Tellurides of Gold, Silver, and Lead at Gympie; Calcite Crystals with Pyrites Inclusions, Croydon.

202. Some Croydon Gold Mines 1905

203. Graphite in Queensland, with Special Reference to the Mount Bauple Deposits 1906

207. Some Mines in the Burnett District, west of Maryborough... 1907

211. Stanhills Tin Fields, near Croydon 1907

212. Some Croydon Gold Mines (Part 2) with Special Reference to Bennion's Reef and the Highland Mary Reef... 1907

216. The Great Fitzroy Copper and Gold Mine, Mount Chalmers 1907

221. Report and Maps of Gympie Goldfield. Report G.S.Q.P. 221 in preparation. Topographical Map of eighteen sheets, G.S.Q.P. 221A, published 1s. 3d. per sheet. Geological Map of eighteen sheets, G.S.Q.P. 221B, published 1s. 3d. per sheet. Mining Map, G.S.Q.P. 221C, in preparation 1912

239. Coal Resources of Queensland 1913

Queensland Government Mining Journal:

On the Occurrence of Gold in assoc. with Antimony in Queensland. In Vol. 5, p. 12 1904

On Central Queensland Coal. In Vol. 5, p. 330 1904

On Torphy's Silver Mine, Crooked Cr., Almaden. In Vol. 6, p. 346 1905

On Highland Mary Reef and Bennion's Mine, Croydon. In Vol. 7, p. 466 1906

On Coal near the Mary River, West of Gundiah Rail. Stn. In Vol. 8, p. 127 1907

On Coal Areas at Bribie Island. In Vol. 9, p. 172 1908

Notes on Croydon, Stanhills and Etheridge Fields. In Vol. 9, p. 455 1908

On Proposal to Test the Lower Measures, Burrum Coalfield. In Vol. 11, pp. 341-2 1910

On Mt. Shamrock Gold Mines. In Vol. 12, pp. 169-173 ... 1911

Tripolite Deposits of Nerang. Vol. 12, p. 367 1911

Bowen River Coal Deposits. Vol. 13, p. 485 1912

Geological Features of the Maryborough District. Vol. 13, p. 641 1912

Limestone Deposits at Flinders and Gore. Vol. 14, p. 187 ... 1913

Supplementary Reports: *See* List *under* separate heading. Nos. 65, 66, 67, 72, 73, 82, 83, 84, 92, 93, 94, 95, 96, 100, 101, 102, 103, 104, 105, 108, 109, 112, 115, 124, 125, 130, 133, 134, 135, 136, 137, 138, 143, 144, 145, 146, 147, 148, 149.

Dunstan Coal Co.'s Bores. *See under* Coal Bores.

—— Coal Leases, Dawson R., 35 miles S. of Boolburra Rail. Stn. Dunstan Seam discovered in 1898. *Min.Ref.* Coal, *see* 1692.

Geological Note: *See under* Dawson Coal Mines.

Dunwich Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3210; Ilmenite, 4891.

Durham Co. Gregory South Dist. *See map*, Pl. 18.

—— Consols Mine, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2751B; Gold, 3725A; Iron Pyrites, 5044A. *See also* Q.G.M.J., Report No. 113.

—— Downs Bores. *See under* Artesian Bores. No. 253.

—— —— Stn., Southern Main Range. *Min.Ref.* Coal, *see* 1659.

Durham Mining Centre, Etheridge Goldfield. Centre about *Lat.* 18° 16′ S.; *Long.* 143° 28′ E. Reefs:—Combo, Durham, Golden Crown, Heart's Content, Hibernia, Lord Byron, New Zealand, Scotia, etc. *Min.Ref.* Galena, *see* 2751B, 2752, 2753; Gold, 3725A, 3726; Iron Pyrites, 5044A, 5045; Malachite, 6216.

GEOLOGICAL NOTE: The country rock is a cross-grained granite, the gold occurring in well-defined quartz reefs.

—— Reef, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2752; Gold, 3726; Iron Pyrites, 5045.

Durrie Co. Gregory South Dist. *See map*, Pl. 18.

Dutton Co. Burke Dist. *See map*, Pl. 20.

—— River Bore. *See under* Artesian Bores. No. 379.

Dykehead Prov. Goldfield, Auburn R., W.byS. of Gayndah. *Lat.*, 25° 42′ S.; *Long.*, 151½° E. *Min.Ref.* Gold, *see* 3631; Kaolin, 5673.

GEOLOGICAL NOTE: The prevailing rock is granite, in which there are several decomposed intrusive dykes. Gold-bearing quartz reefs in the granite are numerous, some being very thick. The district has only been prospected in a desultory manner. *See* G.S.Q. Pub. No. 207 for details.

—— Stn., on Auburn R., W.byS. of Gayndah. *Min.Ref.* Beauxite, *see* 288.

Dynevor Downs Run Bores. *See under* Artesian Bores. No. 254.

Dyson's Opal Mine, 5 miles S.E. of Jundah Opal Field. *Min.Ref.* Precious Opal, *see* 6953A.

Eagle Farm, 7 miles (by rail) N. of Brisbane. *Min.Ref.* Coal, *see* 1762; Sub-artesian Water, 7667.

GEOLOGICAL NOTE: The rocks consist of sandstones and shales of the Ipswich Formation (Trias-Jura), in which, by boring, seams of coal have been discovered. *See* G.S.Q. Pubs. Nos. 108 and 143 for notes.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 182. *See also under* Coal Bores.

—— Flat Sub-artesian Bore. *See under* Artesian Bores. No. 182.

—— Junction, 4 miles N. of Brisbane. *Min.Ref.* Cobalt, *see* 1835A; Manganese-dioxide, 6452A.

Eaglefield Cr., W.S.W. of Mackay. *Min.Ref.* Coal, *see* 1658.

Eaglehawk Bore. *See under* Artesian Bores. No. 413.

—— Group of Copper Leases, Cloncurry. *Include* Eaglehawk, Crow's Nest, Salisbury, Cammie, and King William M. Leases. *Min.Ref.* Cuprite, *see* 2384B; Malachite, 6078A.

Earthy Cobalt. *Syn.* Asbolane, *which see.*

East Bore. *See under* Artesian Bores. No. 354.

—— Mexican G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2885; Gold, 3904; Iron Pyrites, 5168.

East Moreton Coal Measures. *See under* Supplementary Reports Nos. 126, 132, 146.

—— Star Lode, Lawn Hills Silver Mine. *Min.Ref.* Galena, *see* 2694.

East Stowe. Par. of (Pors. 13v, 364). *Min.Ref.* Ironstone, *see* 5617A; Manganese-dioxide, 6461, 6462.

—— Yorkshire Reef, Gaeta Goldfield. *Min.Ref.* Gold, *see* 3574A; Iron Pyrites, 4975A.

Eastbourne Sub-artesian Bore. *See under* Artesian Bores. No. 354.

Easter Gift Copper M.L. (290), Cloncurry. *Min.Ref.* Azurite, *see* 164; Chrysocolla, 1506; Copper Pyrites, 2091; Hematite, 4686; Limonite, 5781; Malachite, 6141; Tile Ore, 2521.

—— Monday Tin Lease, Watsonville. *Min.Ref.* Cassiterite, *see* 895; Copper Ore, 2027.

Eastern Boyne Goldfield, S. of Gladstone. Centre about *Lat.* 24° 25′ S.; *Long.* 151° 30′ E. Discovered in 1863. Statistics: *included in* "Other Goldfields." *Min.Ref.* Galena, *see* 3040; Gold (alluvial) 3375, (reef) 4254-4256

GEOLOGICAL NOTE: The prevailing rock is granite, in which there are several gold-bearing quartz reefs. *See* G.S.Q. Pub. No. 208 for notes.

—— —— R., S.byE. of Gladstone. *Min.Ref.* Strontianite, *see* 7666.

—— Cr., trib. of Gunpowder Cr., Leichhardt R., Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3186.

—— Reef (Western Smithfield Reef), Gympie Goldfield. *Min.Ref.* Gold, *see* 4530.

—— ——. Mt. Clifford Mine. *Min.Ref.* Gold, *see* 4167.

—— Sel. M.F. (2755), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235D; Jasper, 5661A; Limonite, 5895A; Malachite, 6339G.

Eastwood Coal Mine, ½-mile N. of Ipswich. *Min.Ref.* Coal, *see* 1738.

Eaton Hill Bore. *See under* Artesian Bores. No. 226.

Ebagoola, Hamilton Goldfield. Centre about *Lat.* 14° 20′ S.; *Long.* 143° 17′ E. *Min.Ref.* Galena, *see* 2740; Gold (alluvial) 3210-3211, (nugget) 3437A, (reef) 3700-3710A; Graphite, 4589, 4590; Hematite, 4705; Iron Pyrites, 5030-5033; Limonite, 5839; Massicot, 6525; Mispickel, 6679; Sillimanite, 7423; Talc, 7673.

GEOLOGICAL NOTE: *See* Hamilton Goldfield.

Ebbw Vale Colliery, Bundamba Coal Area. *Min.Ref.* Clay, *see* 1580; Coal, 1738A.

Ebrohardt Silver Mine, 4 miles N.E. of Havilah Stn., N. side of Bowen R. *Co.* Drake; *Dist.* Kennedy North. Said to have been opened by Daintree 30 years ago.

Eclipse Colliery, North Ipswich Coal Area. *Min.Ref.* Coal, *see* 1738B.

—— Group of Copper Mines, Cloncurry. *Includes* Eclipse, Lady Molloy, Wanderer, and other M. Leases. *Min.Ref.* Actinolite, *see* 4851; Copper Pyrites, 2069; Limonite, 5749; Malachite, 6091; Redruthite, 7209, 7210; Tile Ore, 2494, 2495.

—— M.L. (571), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2069; Limonite, 5749; Redruthite, 7209; Tile Ore, 2494.

—— Gold Mine, Horn Is. Goldfield. *Min.Ref.* Copper Pyrites, *see* 2179; Galena, 2818; Gold, 3808; Iron Pyrites, 5091; Zinc-Blende, 8092.

—— Silver-Lead Mine, Muldiva. *Min.Ref.* Actinolite, *see* 4861; Cerussite, 1203; Galena, 2803; Malachite, 6233; Tetrahedrite, 7764; Zinc-Blende, 8086.

—— Tin Mine, Eureka Cr. Tin Mines. *Min.Ref.* Cassiterite, *see* 846; Chlorite, 1431.

Eddington Co.; Burke Dist. *See map,* Pl. 20.

—— Run Bores. *See under* Artesian Bores. No. 255.

Edward's No 1 and 2 Claims. *See* Granite Castle Lode.

—— Sel., Mt. Toby. *Min.Ref.* Calcite, *see* 613.

Eel Cr., S.S.W. of Gympie. *Min.Ref.* Copper Pyrites, *see* 2324; Manganese-dioxide, 6493, 6493A; Redruthite, 7307. *See also* Supplementary Report List, No. 125, for further reference.

Egan's Sel., Por. (37), Par. of Palen, S.W. of Beaudesert. *Min.Ref.* Coal, *see* 1782B.

Egyptian Jasper. *See* Jasper.

Eidsvold Goldfield—

Situation : *See maps*, Pls. 4, 5. The township is 35 miles N.W. of Gayndah Rail. Stn., on the Burnett River. *Co.* Yarrol; *Dist.* Burnett. Centre about *Lat.* 25° 23′ S.; *Long.* 151° 18′ E.

Discovery : Gold was discovered in 1858 by a shepherd known as Loddon Bill, but nothing was done until the year 1862. The first gold escort left Eidsvold on April 27th, 1888, with 1,121 oz. of gold.

~~History : *See* History of Eidsvold, by E. F. Craven, in A.R.D.M. (1891).~~

Population : No information available, probably under 30.

Proclamation of Field : First and only one, Nov. 17th, 1887, as follows :—Commencing at the junction of the Harkness Boundary Creek with the Burnett River, and bounded thence by the right bank of that creek upwards to a point about thirty-six chains north of a box-tree marked broad arrow over HK over VI in a triangle, and east of an apple-tree marked broad arrow over XCVI over BT in a triangle on the left bank of the Burnett River; and on the north by a line west to the Burnett River at a point opposite the last-named tree, and by the right bank southerly to the point of commencement.

Area : 7040 acres (11 sq. miles).

Leases : Gold-mining Leases, nil. Miners' Homestead Leases 327; area, 2,599 acres. (1912.)

Mineral Statistics : Gold, *see tables and diagram*, Pls. 36, 46, 46a, 47; Silver, Pls. 37, 46, 46a; Limestone, Pls. 41, 46, 46a.

Statistical Note : Greatest recorded annual gold yield (1890) was 13,597 fine oz.; value, £414,298. Since 1907 the yields have been very small.

The first return (1888) was nearly 6,000 oz., those in 1889 and 1890 averaging 13,450 oz. In 1891 the yield was a little over 9,000 oz., and in 1892 it increased to 12,639 oz., after which the yields gradually decreased to 253 oz. (1907), no yield being recorded for 1908. The total yield of gold to end of 1912 equalled 97,626 fine oz., the value being £414,688, which is equal to 0·55 per cent. of the whole gold production of the State.

Mineral References : **Gold,** *see* 3636-3656; Lead (Anglesite) 13, (Galena) 2733-2736; Copper (Copper carbonate) 1882, (Cuprite) 2421, (Redruthite) 7277; Tin (Cassiterite), 774; Bismuth (Bismite), 313; Antimony (Stibnite), 7610-7612; Molybdenite, 6824; Zinc Blende, 8072-8074; Iron (Hematite) 4702, (Iron Pyrites) 5015-5020, (Ironstone) 5516, (Limonite) 5835-5836, (Mispickel) 6663-6665. Other Minerals—Biotite, 302; Halite, 4651; Hornblende, 4825; Kaolin, 5674; Orthoclase, 7034; Tourmaline, 7826.

Geological Note : The country rocks consist of granite, felsite, and diorite. The felsite and diorite are of later age than the granite, the diorite forming intrusive masses in the latter rock. Gold-bearing reefs occur in the granite, and have been worked to some extent. *See* G.S.Q. Pubs. 102, 124, for details.

Geological Publications : *Reports*—Nos. 48 (1888), 102 (1895), 124 (43) (1887), 160 (1901). *See under* "Geol. Surv. Pub. List" for titles.

Warden : Stationed at Eidsvold. Inspector of Mines : Stationed at Rockhampton.

Reports : Inspector's and Warden's monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Crushing Mills : 3 Batteries = 39 stamps.

General Information : Consult *Pugh's Almanac; Queensland Post Office Directory; Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Eidsvold (6 miles from). *Min.Ref.* Hematite, *see* 4702a; Limonite, 5836.

Eidsvold Extended Goldfield. *See maps*, Pls. 4, 5. Very little, if any, mining is being carried on here at the present time.

PROCLAMATION: First and only one, Nov. 29th, 1889, as follows:—Commencing on the left bank of Harkness Boundary Creek at the north-west corner of Malmoe Run, and bounded thence on the south by that run bearing east to McCord's, Middle Creek; on the east by that creek upwards to a point east from the north-east corner of the Eidsvold Goldfield; on the north by a line west to that corner; and on the west by Harkness Boundary Creek downwards to the point of commencement.

AREA: 3,840 acres (6 sq. miles).

MINERAL STATISTICS: *See* Eidsvold Goldfield.

—— (3 miles E. of) (Mt. Perry Road). *Min.Ref.* Topaz, *see* 7785.

—— (between Mt. Perry and). Coal, *see* 1609B.

—— (Binjour No. 5) Sub-artesian Bore. *See under* Artesian Bores. No. 85.

Eight-Mile Creek Bore. *See under* Artesian Bores. No. 195.

—— —— (Hillsborough) Mg. Centre, Ravenswood Goldfield. *Includes* Premier, Flying Cloud, Budgeree Reefs. *Min.Ref.* Copper Pyrites, *see* 2222A; Galena, 2925; Gold, 4012, 4013; Iron Pyrites, 5237.

—— —— Mt., 8 miles N.N.W. of Fossilbrook. *Min.Ref.* Bismuth (native), *see* 338; Bismutite, 391; Molybdenite, 6838; Scheelite, 7349; Tungstite, 7879; Wolfram, 7963.

—— —— Plains, 8 miles S.E. of Brisbane. *Min.Ref.* Ironstone, *see* 5612; Kerosene Shale, 5714; Siderite, 7419.

—— —— —— Sub-artesian Bore. *See under* Artesian Bores. No. 182.

Einasleigh Co. Cook Dist. *See map*, Plate 8.

Einasleigh Copper Mines and Smelting Works, 102 miles (by rail) S.S.W. of Almaden Rail. Stn. (Etheridge line). *Lat.*, 180° 30′ S.; *Long.*, 144° 5′ E. Einasleigh Copper Lode discovered in 1867 by Richard Daintree. Taken up in 1898 as lease by A. T. Linedale. *Min.Ref.* Copper Pyrites, *see* 2151A; Malachite, 6217; Pyrrhotite, 7154A. *See also under* Govt. Mining Jour., Report No. 96. Smelting Works: *See* separate heading.

Einasleigh Hot Springs, 42 miles E.N.E. of Charleston. *Min.Ref.* Mineral Water, *see* 6567; Sinter (calcareous), 747.

GEOLOGICAL NOTE: The rocks about the Springs comprise gneiss, granite, and schist, and a discoloured calcareous sinter. The water has a temperature of about 180° F., and the sinter deposits are in the form of basins and terraces. The sinter has accumulated within an area of about an acre, the height of the terraces varying up to fifteen feet above the surrounding plain. The springs appear to be drying up, as many of the basins are empty and much of the sinter is crumbling away. For analyses *see* 6567.

Einasleigh R. Heads in the country about 50 miles E. of Gilberton, flows N.W. to join the Gilbert R. 100 miles N.W. of Georgetown and 50 miles N. of Croydon. *Lat.*, about 17° 30′-19° 30′ S.; *Long.*, about 142° 20′-144° 30′ E. Tributaries—Etheridge and Copperfield Rivers, Elizabeth and Junction Creeks. *Min.Ref.* Bismuth, *see* 320; Cerussite, 1190C, 1215; Copper carbonate, 1884, 1885; Galena, 2743; Hematite, 4707; Magnetite, 5985, 5986; Muscovite, 6889A; Redruthite, 7281; Wolfram, 7981.

GEOLOGICAL NOTE: The rocks associated with the Einasleigh Copper deposits are basalt, gneiss, schist, and slate. The copper lode occurs in the altered sedimentary rocks in the bed of the river, and is partly covered by basalt. *See* G.S.Q. Pub. No. 134, p. 8, etc., for details.

—— and Burdekin Waters (between the). *Min.Ref.* Limestone, *see* 644.

Einauro (Cetto Is.), Brit. New Guinea. *Min.Ref.* Limestone, *see* 702.

Elbow Valley, Warwick. *Min.Ref.* Jasper (green), *see* 5652.

Elder Bore. *See under* Artesian Bores. No. 269.

—— Cr. Mining Centre, Cloncurry. *Includes* Elder and Mountain Home Groups of Copper Mines. *Min.Ref.* Asbolane, *see* 118; Cuprite, 2389; Garnet, 3151; Malachite, 6086; Manganese-dioxide, 6387.

—— Group of Copper Mines, Cloncurry. *Include* Elder, Three Jokers, Dromedary, Laird, and Montana M. Leases. *Min.Ref.* Copper Ore, *see* 2017A.

—— M.L. (415), Cloncurry. *Min.Ref.* Copper Ore, *see* 2017A.

Elderslie Co. Gregory North Dist. *See map,* Pl. 20.

—— Lease Bores. *See under* Artesian Bores. No. 256.

Eldorado Colliery, Clermont Coalfield. Mining operations commenced here in 1892. *Min.Ref.* Coal, *see* 1667.

—— Gold Claim, Black Ridge, Clermont. *Min.Ref.* Coal (bands), *see* 1661; Gold (alluvial), 3301.

—— —— Mine, Thane's Cr. Goldfield. Discovered by Mr. Parfitt, in December, 1893. *Min.Ref.* Gold, *see* 3865; Iron Pyrites, 5127.

Electron Silver Mine, Etheridge Goldfield. *Min.Ref.* Chalcanthite, *see* 1319; Copper carbonate, 1886; Copper Pyrites, 2144; Gold, 3739; Silver, 7450A.

Elenora Bore. *See under* Artesian Bores. No. 148.

Elephant Wolfram Lease, nr. Herberton. *Min.Ref.* Topaz, *see* 7801; Wolfram, 8017.

Elgin Co. Maranoa Dist. *See map,* Pl. 12.

Eliza Bore. *See under* Artesian Bores. No. 269.

Elizabeth Cr., br. of Einasleigh R., S.W. of Fossilbrook. About *Lat.* 17° 55'-18° 10' S.; *Long.* 143° 55'-144° 40' E. *Min.Ref.* Beryl, *see* 300; Garnet, 3154.

Geological Note: The rocks about Elizabeth Creek comprise schists, quartzites, etc. (of undetermined age), and granite, the latter forming large massive intrusions in the altered sedimentary rocks. Basalt flows also exist in the locality, and in places form a cover to the older rocks. *See* G.S.Q. Pubs. Nos. 150 for notes, and 217 for maps.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 381.

Ellen Boss Reef, Dreghorn Diggings, Ravenswood Goldfield *Min.Ref.* Gold, *see* 4083; Hematite, 4743; Iron Pyrites, 5278.

—— Harkins Lease (568), 1 N. Lease (634), 1 S. Lease (636), Gympie Goldfield. *Min.Ref.* Gold, *see* 4427-4429; Iron Pyrites, 5459.

—— —— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4504.

—— —— S. and Wilmot L. (669), Gympie Goldfield. *Min.Ref.* Gold, *see* 4430.

Ellerton Park, Broxburn, S.W. of Toowoomba. *Min.Ref.* Ironstone, *see* 5538.

Elliott's Bore. *See under* Artesian Bores. No. 453.

Elmina Lease Bores. *See under* Artesian Bores. Nos. 173, 257.

Elphinstone Cr., Ravenswood. Runs through Ravenswood and flows S.W. into the Burdekin R. About *Lat.* 20° 3'-20° 15' S.; *Long.* 146° 52'-146° 56' E. *Min.Ref.* Azurite, *see* 215; Copper Pyrites, 2223-2226; Gold (alluvial) 3263, (reef) 4023-4028; Iron Pyrites, 5245, 5246; Zinc Blende, 8141-8144.

—— Co. Kennedy North Dist. *See map,* Pl. 16.

—— Stn., 66 miles S.W.byW. of Mackay. *Lat.* 21° 28' S. *Long.* 148° 18' E. *Min.Ref.* Coal, *see* 1700.

—— Township, W. of Mackay. For coal references *see under* Bee Cr., Carborough Cr., Hail Cr.

—— and Four-mile Crs. (1 mile W. of junction of), Upper Burdekin. *Min.Ref.* Siderite, *see* 7409.

Elsie M.C., Cloncurry. *Min.Ref.* Chrysocolla, *see* 1511A1.; Limonite, 5809; Malachite, 6170.

—— Reef, Croydon. *Min.Ref.* Gold, *see* 3534; Graphite, 4577.

—— Shaft, Mt. Moss S.L. (168), Kangaroo Hills Mineral Field. *Min.Ref.* Calcite, *see* 505; Cerussite, 1252; Chrysocolla, 1532; Galena, 2971; Gypsum, 4624; Pyrolusite, 7124.

Elton Bores. *See under* Artesian Bores. Nos. 154, 227.

Elvandale Bore. *See under* Artesian Bores. No. 225.

Elverston Lease Bore. *See under* Artesian Bores. No. 258.

Elvira Bore. *See under* Artesian Bores. No. 200.

Embley River, West Coast of Cape York Peninsula. *Min.Ref.* Ironstone, *see* 5536.

Geological Note: The rocks consist of sandstone, etc., of Desert Sandstone Formation (Upper Cretaceous). Pisolitic iron ore occurs near the river. *See* G.S.Q. Pub. 180 for details.

Emerald, W. of Rockhampton, on Central Rail. line. *Lat.*, 23° 31′ S.; *Long.*, 148° 9′ E. *Min.Ref.* Opal (wood), *see* 7010.

Geological Note: Basalt occurs throughout the district, resting on Permo-Carboniferous shales and sandstones. Desert Sandstone forms escarpments to the hills some miles to the west of the town, conspicuously along the railway line. At Selma, below the basalt, carbonaceous shale has been found to contain lignite and fossil leaves, and is probably of Tertiary age. *See* G.S.Q. Pub. No. 107 for notes and maps.

Emerald (Oriental). *See under* Corundum. *Var.* Sapphire.

Emerson's Wolfram Mines, head of California Cr. *Min.Ref.* Cassiterite, *see* 928; Monazite, 6876; Wolfram, 7961.

Emery. *Var. of* Corundum, *which see.*

Emily (Craigs') Antimony Lease, Northcote, Hodgkinson. *Min.Ref.* Cervantite, *see* 1305; Gold, 3756; Iron Pyrites, 5057; Stibnite, 7619.

—— Reef, Northcote. *Min.Ref.* Cervantite, *see* 1304a, 1305; Gold, 3755, 3756; Iron Pyrites, 5056a, 5057; Stibnite, 7619, 7621.

Emperor P.P.A. (320), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235e; Hematite, 4769b, 6339h; Manganese-dioxide, 6448a.

—— Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Empress Reef, Jimna (Yabba) Goldfield. *Min.Ref.* Galena, *see* 3076; Gold, 4400; Iron Pyrites, 5447.

—— of India Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Emu Cr., about 10 miles N.W. of Cressbrook. *Min.Ref.* Bismuth (native), *see* 351; Gold (ore), 4192; Silver (ore), 7565.

—— ——, 3 miles E. of Emu Vale Rail. Stn. (Killarney br. line). *Min.Ref.* Coal, *see* 1633; Tripolite, 7028a.

—— ——, head of Great Dividing Range, nr. Irvinebank, flows W. and N.W., and joins Walsh R. about 12 miles W.S.W. of Dimbulah Rail. Stn. (Chillagoe line). Note: The Bamford Wolfram Mines are situated close to Emu Cr., near the head of which there are also tin and copper mines. *Min.Ref.* Cassiterite, *see* 938; Cuprite, 2433; Garnet, 3107; Ilmenite, 4892; Malachite, 6231; Monazite, 6877; Orthoclase, 7041; Rutile, 7327; Wolfram, 7964.

—— —— (Mt. Langan), rises in Main Dividing Range, 30 miles N.byW. of Toowoomba, flows N.E. into Brisbane R. at Colinton, 8 miles N.N.W. of Kannangur Rail. Stn. (Esk line). Length about 40 miles. *Min.Ref.* Bismuth, *see* 321; Calcite, 524; Cassiterite, 1171; Cerussite, 1295; Galena, 3031-3034; Gold, 4195-4197; Iron Pyrites, 5336-5337; Lead, 5727; Limonite, 5898; Massicot, 6546-6548; Mispickel, 6776; Silver (ore), 7507; Zinc-Blende, 8176.

—— ——, 3 miles N. of Fossilbrook. *Min.Ref.* Cassiterite, *see* 938a; Monazite, 6877a.

—— —— Bores. *See under* Artesian Bores. Nos. 134, 271.

Emu Creek Opal Workings, Paroo Mineral Field, N.W. of Cunnamulla. *Min.Ref.* Opal (precious), *see* 6956.

—— —— Tin Mines, trib. of Walsh R. *Min.Ref.* Cassiterite, *see* 931-937; Ilmenite, 4892; Orthoclase, 7041; Rutile, 7327.

—— Hills Bore. *See under* Artesian Bores. No. 227.

Emu Park, N.E.byE. of Rockhampton. *Min.Ref.* Apatite, *see* 80; Turquoise, 7910.

Geological Note: The rocks are Devonian quartzites and slate, traversed in all directions by numerous quartz veinlets. Green turquoise is found in the quartz veins, and is also distributed irregularly in the quartzites.

Emu Plains Silver Field, Bowen R., nr. Mackay. *Min.Ref.* Azurite, *see* 227; Barytes, 276; Calcite, 507; Copper (ore), 2039; Malachite, 6321; Silver, 7496, 7496a, (native) 7559; Tetrahedrite, 7772.

Geological Note: Metamorphic crystalline rocks prevail in this locality (pre-Permo-Carboniferous), and they contain veinlets of copper-silver ore. *See* G.S.Q. Pub. No. 54 for details.

—— Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4272.

Emuford, Emu Cr., br. of Walsh R., 11 miles S.E. of Petford. *Lat.*, 17° 27′ S.; *Long.*, 145° 2′ E. *Min.Ref.* Bismuth (native), *see* 339; Bismuthinite, 369; Bismutite, 392; Cassiterite, 938; Cuprite, 2433; Garnet, 3107; Ilmenite, 4892; Malachite, 6231; Monazite, 6877; Rutile, 7327; Wolfram, 7964.

Geological Note: The prevailing rocks are granite, greisen, and altered grits and conglomerates. In these rocks there are lodes which contain Wolfram, Tin, Molybdenite, Monazite, and Bismuth, two or more of these minerals frequently being associated with one another.

Emuvale, Par. of (Pors. 848, 849, and 1985). *Min.Ref.* Coal, *see* 1630, 1633.

Emuvale (Rail. Stn.), E. of Warwick. *Min.Ref.* Cimolite, *see* 1539; Kaolin, 5682.

Enargite. *Compo.*, Sulpho-arsenide of copper. *Colour and streak,* greyish black. *H.* = 3. *Sp.gr.* = 4·4.

2590A. ——. *Assoc.with* Copper Pyrites and Scorodite in lode. *Loc.* Lancelot Mines, Newelton, Herberton G. and M.F. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* A.R., p. 65 (1912).

Endearer Claim, Black Ridge, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3302.

Endeavour Mine, Cawarral Goldfield. *Min.Ref.* Gold, *see* 4321; Iron Pyrites, 5399.

—— R., Heads at Mt. Rose, 20 miles W.byN. of Cooktown, and flows E.byS. into Ocean at Cooktown. Length about 25 miles. *Min.Ref.* Coal, *see* 1604; Hornblende, 4826; Olivine, 6922.

Endymion Sub-artesian Bore. *See under* Artesian Bores. No. 194.

Engine-drivers' Certificates. *See under* Inspection of Machinery and Scaffolding Act of 1908.

England and Party's Mine, Horn Island Goldfield. *Min.Ref.* Scorodite, *see* 7368.

Enniskillen (Mt.) Bores. *See under* Artesian Bores. Nos. 348, 349.

Enoggera Bore. *See under* Artesian Bores. No. 178.

Enoggera Goldfield—

SITUATION: *See maps,* Pls. 6, 7. 6½ miles W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. Centre about *Lat.* 27° 26′ S.; *Long.* 152° 55′ E.

DISCOVERY: Gold was found here in 1868. The Mountain Rise Mine was opened by J. Perry in 1868; abandoned the same year. Parish and party opened the mine again in 1870. Other developments have taken place at intervals since then.

POPULATION: Less than 20.

PROCLAMATION: First and only one, 17th Feb., 1904, as follows:—Commencing at a point on the right bank of Kedron Brook, being the N.W. corner of portion 478, parish of Enoggera, and bounded thence on the E. by a timber reserve bearing N. about sixty-five chains; thence by the S. boundary of portion 78 bearing W. seventy-one chains and fifty-five links; thence by a road and portions 110 and 111, parish of Samford, bearing S. one hundred and thirty-nine chains; thence by portions 111 and 100 bearing W. eighty-five chains to portion 101, by that portion bearing S. twenty-five chains and nine links; thence by portions 101, 103A, and 109 bearing S.W. one hundred and eight chains and twenty-eight links; thence again by portion 109 bearing W. sixty chains and twenty-three links; thence by portion 108 bearing S. about twenty-seven chains to the N. boundary of the Enoggera Water Reserve, by that northern boundary E. and S. to the N.W. corner of portion 844, parish of Enoggera; thence by portions 844 and 863 bearing E. about forty chains and sixty-two links; thence by portion 863 bearing S. thirty-eight chains and five links; thence by the N. boundary of the Enoggera Water Reserve easterly to the S.W. corner of portion 854, by portion 854 bearing N. ninety-three chains, and by the S. boundaries of portions 84, 821, and 83 bearing E. about seventy-seven chains and nineteen links, and by the W. boundaries of portions 507, 492A, 492, 479, and 478 bearing north to the point of commencement;—exclusive of all selected and alienated lands.

AREA: 2,600 acres (4 1/16 sq. miles).

MINERAL STATISTICS: Included in "Other Goldfields." *See* Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: **Gold,** 4213-4215; Lead (Galena), 3035A; (Minium), 6642; Copper (Malachite), 6349; Bismuth (Bismuthinite), 375; (Bismutite), 410; Zinc-Blende, 8177-8178; Iron Pyrites, 5343, 5344; Chiastolite, 1417; Heulandite, 4820; Hornblende, 4842.

GEOLOGICAL NOTE: The prevailing rocks are granite and schists, which form conspicuous ranges in the district. Gold-bearing reefs, more or less irregular, are exposed in numerous places, but up to the present have not proved payable.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 143 (1899), 159 (1901). *See* Geol. Sur. Pub. List for titles. *See also* Supplementary Reports List, No. 63.

WARDEN: Stationed at Brisbane. INSPECTOR OF MINE: Stationed at Gympie.

Enquiry Group of Copper Leases, Cloncurry. *Includes* Enquiry, Snowstorm, Feathertop, King's Cross, and King's Crown M. Leases. *Min.Ref.* Copper Ore, *see* 2016A.

—— M.L. (265), Cloncurry. *Min.Ref.* Copper Ore, *see* 2016A.

Ensay Bore. *See under* Artesian Bores. No. 159.

Enterprise Reef, on br. of Cochrance Cr., W. of Gympie. *Min.Ref.* Galena, *see* 3089; Gold, 4542; Iron Pyrites, 5468; Siderite, 7420; Zinc-Blende, 8214.

—— ——. Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3761.

—— ——. Normanby Goldfield. *Min.Ref.* Copper Pyrites, *see* 2256; Gold, 4122; Iron Pyrites, 5301.

Epidote. *Compo.*, Silicate of alumina, iron, and lime. *Colour*, Usually of greenish shades. *Streak*, Uncoloured. *H.* = 6·7. *Sp.gr.* = 3·2-3·5.

2591. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Limonite, Calcite, Actinolite, and Chlorite, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group, Duck Cr., 1½ mile N.N.W. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

2591A. —— (as clear crystals). W. bank of Leichhardt R., Coolullah Run, about 70 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* O.R. (1910).

2592. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Magnetite, Mispickel, Native Bismuth, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, and Chalcedony. *Loc.* Biggenden Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pubs. 60 (1890), 173 (1902), and 194 (1904), and G.S.M.

2593. ——. *Assoc.with* Wollastonite. *Loc.* Hill N.E. of Mt. Biggenden (*ante*). *Ref.* G.S.M.

2593A. ——. *Assoc.with* Garnet. *Var.* Pyrope and Calcite. *Loc.* Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* B.D.

2594. ——. *Assoc.with* Magnetite, Hematite, Limestone, Chert, Garnet, and Wollastonite. *Loc.* Mt. Lucy, 4 miles W. of Almaden Rail. Stn. (Chillagoe line), 125 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* G.S.Q. Pubs. 134, p. 16 (1898), and 196, pp. 6-8 (1905).

2595. ——. In silicified slate. Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* O.R.

2596. ——. Peak Vale Stn., 18 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* B.D.

2597. ——. *Assoc.with* Ferro-Calcite and Malachite. *Loc.* Collaroy Stn., 25 miles N.W. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.M.

2598. ——. *Assoc.with* Actinolite, in garnet rock. *Loc.* Crow's Nest (Ravensbourne), 34 miles (by rail) N. of Toowoomba. *Co.* Cavendish; *Dist.* **Moreton.**

2599. ——. *Assoc.with* Gold (traces), Silver, Ironstone, Wollastonite, and traces of Copper carbonate, in limestone, garnet rock, and granite. *Loc.* P.A. (49), Diglum Cr., Barmundoo Stn., 28 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 162, pp. 6, 9 (1901).

2600. ——. *Assoc.with* Garnet and Wollastonite. *Loc.* Booreeco Cr., 30 miles S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.M.

2601. ——. *Assoc.with* Copper Pyrites, Actinolite, and Magnetite, in garnet rock. *Loc.* Shaft above Blue Bag, Glassford Cr. Copper Mines, 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne Valley line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.M.

2602. ——. *Assoc.with* Magnetite, Hematite, and Garnet. *Loc.* ½-mile S.S.E. of Targinnie Head Stn., 9 miles W. of Gladstone. *Co.* Clinton (*ante*). *Analysis:* Iron = 64·9 per cent.; Silica = 5·2 per cent.; Phosphorus = nil; Sulphur = trace. *Ref.* G.S.Q. Pub. 194, p. 23 (1904).

2603. ——. *Assoc.with* Zoicite, in large lode. *Loc.* W. of Table Mt., 5 miles E.byS. of Stanwell Rail Stn. (Central line). *Co.* Livingstone; *Dist.* Port Curtis. *Analysis:* Moisture at 100° C. = 0·2 per cent.; Loss on ignition = 0·2 per cent.; Silica = 36·6 per cent.; Iron Oxide = 13·4 per cent.; Alumina = 25·3 per cent.; Lime = 23·2 per cent.; Magnesia = trace. *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

2604. ——. Stewart's Cr., 3 miles W.N.W. of Stanwell Rail. Stn. (Central line). *Co.* Livingstone (*ante*). *Ref.* O.R.

2605. —— (fibrous). *Assoc.with* Copper Pyrites and Calcite, in quartz lode. *Loc.* 1½ mile S. from Dee Alluvial Gold Mines, 6 miles N.E. of Mt. Morgan Rail. Stn. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* B.D.

2606. ——. In quartz reef. Glen Dee, Dee R., 5 miles E.N.E. of Mt. Morgan. *Co.* Raglan (*ante*). *Ref.* B.D.

2607. ——. *Assoc.with* Copper Pyrites. *Loc.* Old Dundee Copper Mines, Dee R., 22 miles S.S.W. of Mt. Morgan Rail. Stn. *Co.* Raglan (*ante*). *Ref.* B.D.

2608. ——. In slate. Tableland, Marodian Goldfield, 8 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* L.C.B.

2609. ——. In diorite. Ortt's Mine, Yorkey's Goldfield, 9 miles N. of Kilkivan (*ante*). *Ref.* L.C.B.

2610. ——. *Assoc.with* Actinolite, Hematite, Garnet, etc. *Loc.* Yorkey's Surprise G.M.L., Yorkey's Goldfield (*ante*).

Epsomite. *Syn.* Epsom Salts. *Compo.*, Sulphate of magnesia. *Colour*, White. *Taste*, Bitter. *H.* = 2·2. *Sp.gr.* = 1·7. *Contents* (*max.*), Magnesia 16 per cent.

2611. ——. As incrustations. Old Workings, Golden Gate Reef, 4 miles N.W. of Croydon. *Co.* Surrey; *Dist.* Burke. *Ref.* B.D.

2612. ——. *Assoc.with* Gypsum, in decomposed slate. *Loc.* Gaeta Goldfield, 30 miles N. of Mt. Perry Rail. Stn. *Co.* Bowen (should be Yarrol); *Dist.* **Burnett.** *Ref.* O.R.

2613. ——. Lady Catherine Tin Mine, Hodgkinson Goldfield, 19 miles (by coach) N.N.W. of Dimbulah Rail. Stn. (Chillagoe line), 92 miles (by rail and road) W. of Cairns. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 59 (1900).

2614. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Limonite, and Calcite, in quartz lode, in schist and quartzite. *Loc.* Duchess M.L. 275, Duchess Group, Jack's Cr., Burke R., 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 18-22 (1908).

2615. ——. Hazlewood Cr., head of Bowen R., 50 miles W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.M.

2616. ——. *Assoc.with* Coal Bands and Gold, in alluvial deposits. *Loc.* Mason's Claim, Black Ridge, 12¾ miles N.byW. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 201, p. 50 (1906).

2617. ——. *Assoc.with* Gold, Marcasite, Psilomelane, and Ironstone, in alluvial deposits. *Loc.* Paterson's Claim, McMaster's, 14 miles N.W.byN. of Clermont. *Co.* Dickson; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 201, p. 63 (1906).

2618. ——. In sandstone caves. "Amphitheatre," Glen Haughton, Upper Dawson R., 35 miles N.W. of Taroom. *Co.* Labouchere; *Dist.* Leichhardt. *Ref.* B.D.

Erin's Hope Reef, Donnybrook, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2924A; Gold, 4009; Iron Pyrites, 5236.

Erin-go-Bragh Extd. M.C. 372, Cloncurry. *Min.Ref.* Azurite, *see* 163; Copper Pyrites, 2088; Limonite, 5777; Malachite, 6136; Redruthite, 7238.

—— Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1081; Fluorspar, 2671.

Erne Run Bores. *See under* Artesian Bores. No. 259.

Eromanga, 183 miles W.byS. of Charleville Rail. Stn. (Western line). *Co.* Gordon; *Dist.* Gregory South. *Lat.*, 26° 42′ S.; *Long.*, 143° 13′ E. Opal Fields, *see under* Keeroongooloo and Kyabra.

GEOLOGICAL NOTE: The country at Eromanga is made up of rocks belonging to the "Rolling Downs" Formation. To the west and north-west there are "Desert Sandstone" tablelands in which opal deposits occur. The opal is found in "sandstone boulders" in mottled sandstone, and in ironstone. *See* G.S.Q. Pub. No. 177 for details.

—— Town and District Bores. *See under* Artesian Bores. Nos. 23, 24.

Eroungholoa Opal Fields. *See* Keeroongooloo and Kyabra Opal Fields.

—— Station. Adjourns the township of Eromanga, *which see*.

Erratic Star Reef, Nuggety Gully, Eungella (Mt. Britten) Goldfield. *Min.Ref.* Calcite, *see* 518; Gold, 4185.

Erubescite. *Syn.* Bornite, *which see*.

Erythrine. *Syn.* Erythrite, Cobalt Bloom, Cobalt Ochre. *Compo.*, Arsenate of cobalt. *Colour*, Crimson, peach-red. *Streak*, Pink. *H.* = 1·5-2·5. *Sp.gr.* = 2·9. *Contents* (*max.*), Cobalt 29 per cent.

2619. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Magnetite, Mispickel, Bismuth (native), Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Viridite, Actinolite, Calcite, Chalcedony, and Epidote. *Loc.* Biggenden Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail, Stn., 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Analysis:* Bismuth = 44·45, Cobalt = 4·75, Nickel = 0·68, Iron = 13·55, Manganese = 9·75, Lime and Magnesia = 19·92, Silica = 6·90. *Ref.* G.S.Q. Pubs. 60, p. 2 (1890), 173 (1902), and 194 (1904).

2620. ——. Twelve-mile Cr., 7 miles W. of Gilberton, 48 miles S.byE. of Charleston Rail Stn. (Etheridge line). *Co.* Victor; *Dist.* **Cook.** *Ref.* O.R.

Erythrite. *Syn.* Erythrine, *which see.*

Escort (or Stone) Cr., Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

Eshelby's Bore. *See under* Coal Bores.

Esk Rail. Stn., 67 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** Railway Base for Copper Mines at Biarra.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 260.

—— to Nanango Road, nr. Taromeo. *Min.Ref.* Rutile, *see* 7336.

Eskdale Stn., 14 miles N.W. of Esk Rail. Stn. *Min.Ref.* Mispickel, *see* 6774.

Esmeralda Co. Burke Dist. *See map*, Pl. 20.

Esperanza Silver Mine, Ravenswood. *Min.Ref.* Cerussite, *see* 1227; Galena, 2939.

Essex Downs Bore. *See under* Artesian Bores. No. 410.

Essie Copper Lode. *See* MacFadzen's M.F. (1749).

Eta Sub-artesian Bore. *See under* Artesian Bores. No. 157.

Etheridge Co. Cook Dist. *See map*, Pl. 8.

Etheridge Goldfield. *See maps*, Pls. 8, 9, 32.

Situation: The town of Georgetown is 160 miles (by rail and road) S.W. of Almaden Rail. Stn. (Etheridge line). *Co.* Gilbert; *Dist.* Cook. Centre about *Lat.* 18° 19′ S.; *Long.*, 143° 32′ E.

Discovery: In 1871. First Gold Escort from the field took place on April 20th, 1872.

Population: 3,052 (Census 1911).

Rainfall: Yearly aver., 1902 to 1907, 28·64 inches. Wet days, 62.

Proclamation of Field: First gazetted, 18th Jan., 1872; last alteration, 2nd June, 1910, as follows:—Commencing at the confluence of the Einasleigh and Gilbert Rivers, and bounded thence by the Einasleigh River upwards to its confluence with the Etheridge River; thence by a line south-easterly to the northern watershed of the Etheridge River and Fiery Creek, by that watershed south-easterly to a point south from the south-west corner of Eveleigh No. 5 Block on the Einasleigh River; thence by a line north to that corner; thence by the west, north, and part of the east boundaries of that block, by the north and east boundaries of Eveleigh No. 4 Block; thence easterly by the northern boundaries of Brooklands No. 1, Fixby, Fixby No. 2, Springfield, and Fossilbrook Blocks, by part of the west, the northern, and eastern boundaries of St. Ronan's Block, the east boundary of St. George Block, and by a line south to the Great Dividing Range near the south-west corner of Ellanboro Block, by part of the west boundary of that block, the west boundaries of Lawn Spring and Wyandotte Blocks, part of the north and west boundaries of Ringwood Park No. 2 Block to the Great Dividing Range, by that range southerly to the north-west boundary of Lucky Downs Block, by part of the south-west boundary of that block to the south-east corner of West Downs Block; thence by the south boundary of that block, part of the east and south boundaries of Salcey Forest, the south boundaries of Quinton, Lyndhurst, Sunnyside, and Lochaber Blocks, to the Copperfield River, by that river upwards to the north-east corner of Oak Park Block, by the north boundary of that block, and by a line west to the Newcastle Range, by that Range southerly to the Gregory Range, by that range north-westerly to a point south from the south-east corner of Bangall Block, by a line north to

Etheridge Goldfield—*continued:*

that corner; thence by the south and part of the west boundaries of Bangall Block, the south, west, and north boundaries of Bangall No. 1 Block, the north and east boundaries of a camping reserve, proclaimed in *Government Gazette,* 1906, part I., page 424, the south boundaries of Rocky Vale and Highlands Blocks, the east boundary of Highland, part of the south-west boundary of Tinker Bell Block, the south-west and part of the east boundaries of Langlo Vale No. 9 Block, the south boundary of Box Hill No. 3 Block, part of the west, the south, and part of the east boundaries of Langlo Vale No. 1 Block, the south boundaries of Box Hill No. 1 and Box Hill No. 5 Blocks, part of the south-west and the south-east boundaries of Box Hill No. 4 Block to the Gilbert River; thence by a line north and by the east and north boundaries of Green Hills No. 6 Block, parts of the east and the north boundaries of Green Hills No. 5, Green Hills No. 4, Box Hill, and Box Hill No. 2 Blocks, the north-east and north-west boundaries of Bumba Block to the Gilbert River, by that river downwards to the east corner of Strathmore Block, by the south-east, south-west, and part of the north-west boundaries of that block, part of the south-west boundary of Oswald Block, the south and south-west boundaries of Jena Block to a point south of the starting point; and thence by a line north to the point of commencement;—exclusive of Green Hills and Oaks Gold Fields.

AREA: 7,398,120 acres (11,558 sq. miles).

LEASES: Gold-mining Leases in force, 82, area 734 acres; Miners' Homesteads, 397, area 1,388 acres; Mineral Leases, 37, area 498 acres (1912).

PRINCIPAL MINING CENTRES: Georgetown, Durham, Cumberland, Castleton, Donnybrook, Charleston, Percyville, Gilberton, Lane's Cr., Mt. Hogan, *which see.*

MINERAL STATISTICS:—

Gold,	*see tables and diagrams,*	Pls. 36, 46, 46A, 47.
Silver,	,,	Pls. 37, 46, 46A.
Tin,	,,	Pls. 38, 46, 46A.
Copper,	,,	Pls. 39, 46, 46A.
Bismuth,	,,	Pls. 40, 46, 46A.
Lead,	,,	Pls. 38, 46, 46A.
Wolfram,	,,	Pls. 42, 46, 46A.
Limestone,	,,	Pls. 41, 46, 46A.

STATISTICAL NOTE: Greatest annual recorded gold yield (1885) is 19,584 fine oz.; value £84,331. Smallest annual recorded gold yield (1878) is 5,006 fine oz.; value £21,264.

Previous to year 1878 the returns were not separated from other fields. In 1878 the return was 5,006 oz.; the following three years the yield averaged 14,000 oz. From 1882 to 1884 the returns were over 13,000 oz., and in the next two years the yields rose to 19,854 oz. and 18,000 oz. respectively. From 1887 to 1897 the yields fluctuated between 12,000 oz. and 16,000 oz., subsequent years showing a gradual decrease to 8,102 oz. in 1907, when a revival in the following year, 1908, produced 17,664 oz. Total yield of gold to end of 1912 was 569,248 fine oz., having a value of £2,418,010—equal to 3·21 per cent. of the whole gold production of the State.

MINERAL REFERENCES: **Gold** (alluvial), *see* 3212, 3236, 3240-3243, (reef) 3715, 3744, 3791A, (telluride) 7701, 7702; Silver, 7450-7450D, (native) 7554; Lead (Anglesite) 21A-21E, (Cerussite) 1190A-1190E, (Galena) 2744-2759C, 2814A, 2825-2827, (Massicot) 6525A-6525D, (Pyromorphite) 7140-7144; Copper (Chalcanthite) 1319, (Copper Carbonate) 1886, 1900, (Copper Ores) 2025-2025D, 2033A, 2033B, (Copper Pyrites) 2144-2151C, (Cuprite) 2442, (Malachite) 6215B-6217A, (Redruthite) 7278A, 7282, (Tenorite) 7719, (Tile Ore) 2550A; Tin (Cassiterite) 971, 971A; Molybdenite, 6840A; Bismuthnite, 370; Wolfram, 7971B; Scheelite, 7342; Zinc-Blende, 8075-8079; Manganese-dioxide, 6406; Cobalt (Erythrine), 2620; Iron (Hematite) 4708, 4723-4724, (Iron Pyrites) 5037-5056, 5086B, (Ironstone) 5521, (Limonite) 5841, 5848, (Marcasite) 6501, (Mispickel) 6680-6683. Other Minerals—(Pyrrhotite) 7153-7154; Agate, 1370-1373; Diamond, 2573; Felspar, 2632; Fluorspar, 2656; Garnet, 3155; Mica, 6555; Ruby, 2361; Sapphire, 2345, 2346; Tripolite, 7025.

Etheridge Goldfield—*continued :*

Geological Note : The country rocks of the field are a coarse-grained granite in association with slate, mica schist, sandstone, and quartzite, of undetermined age. Gold-bearing reefs occur in the granite and in the altered sedimentary rocks. *See* G.S.Q. Pubs. Nos. 151 and 219 for details.

Geological Publications : *Reports*—Nos. 31, 35, 48, 61, 151, 219. *Maps*—Nos. 137, 218. *See under* Geol. Surv. Pub. List for titles. *See also under* Govt. Mining Jour., Reports Nos. 70, 82, 89, 113. *See also* List of Maps *under* Department of Mines Publications.

Warden : Stationed at Georgetown. Inspector of Mines : Stationed at Croydon.

Reports : Inspector's and Warden's monthly (usually) in Q.G.M. Jour. ; annually in A.R.D.M.

Crushing Mills : Etheridge Goldfield—Sixteen batteries (153 stamps), Woolgar Goldfield—Three batteries (19 stamps). Charges, 10s. to 25s. per ton.

General Information : Consult *Pugh's Almanac, Queensland Post Office Directory, Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane). Local Newspaper : *Mundic Miner* (printed at Georgetown).

Etheridge, Junr. (R.)—

Geological Survey Publications—

92. Geology and Palæontology of Queensland and New Guinea (By Jack and Etheridge). 1892

154. Bulletin, No. 12. Corals from the Coral Limestone of Lion Creek, Stanwell, near Rockhampton 1900

158. Bulletin, No. 13. Additional Notes on the Palæontology of Queensland, Part 2 1901

190. Records No. 1. (viii.) On the Occurrence of the Genus Halysites in the Palæozoic Rocks of Queensland and its Geological Significance 1904

231. The Lower Palæozoic Corals of Chillagoe and Clermont, Part I. 1911

Eton (Mackay branch line), 23 miles (by rail) S.W.byW. of Mackay. *Lat.*, 21° 15′ S. ; *Long.*, 149° 2′ E. *See maps,* Pls. 14, 15. *Railway Base* for Mt. Spencer Goldfield, and for the copper mines at Mt. Flora and Mt. Orange.

Geological Note : Coal measures prevail throughout the district, but the coal seams so far discovered are of no commercial value. Much of the coal-measure country is covered by recent alluvial deposits. *See* G.S.Q. Pubs. Nos. 39, 53, 164, 203 for details.

——, Par. of (Sels. 776, 777), 9 miles S.W. of Mackay. *Min.Ref.* Graphite, *see* 4603.

—— Vale Bores. *See under* Artesian Bores. Nos. 261, 395.

Eukalunda. *See maps,* Pls. 14, 15. Sellheim Mineral Field. *Lat.*, 20° 52′ S. ; *Long.*, 147° 6′ E. *Min.Ref.* Azurite, *see* 232 ; Bismite, 314 ; Bismuth (native), 350 ; Bismuth (ores), 356 ; Copper (ore), 2040 ; Copper Pyrites, 2266, 2267 ; Cuprite, 2467 ; Galena, 3012-3022 ; Gold, 4146 ; Gypsum, 4627 ; Hematite, 4762, 4763 ; Ironstone, 5591-5593 ; Limonite, 5888 ; Malachite, 6329-6331 ; Manganese-dioxide, 6446, 6447 ; Mispickel, 6768, 6769 ; Scorodite, 7372 ; Silver (native) 7561, (ore) 7564 ; Wolfram, 8034b.

Geological Note : The main rocks in the locality are the shales and sandstones of Gympie Formation (Permo-Carboniferous), with which there are associated some masses of altered dolerite. Silver lodes are a conspicuous feature of the Sellheim Mineral Field, the principal occurrences being at Eukalunda. *See* G.S.Q. Pub. No. 57 for details and maps.

—— Bismuth Mine, Sellheim Mineral Field. *Min.Ref.* Bismite, *see* 315 ; Bismuth ores, 356 ; Copper Pyrites, 2267 ; Hematite, 4763 ; Manganese-dioxide, 6447.

Eulolo Lease Bores. *See under* Artesian Bores. No. 262.

Eulytite. *Compo.*, Silicate of bismuth. *Colour*, Yellowish, greyish, brownish, resinous. *H.* = 4·5. *Sp.gr.* = 5·9-6·0. *Contents* (*max*), Bismuth, 83 per cent.

2621. —— (?) Biggenden Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. Gayndah line, 58 miles (by rail and road) W. of Maryborough. *Co.* Cook ; *Dist.* Burnett. *Ref.* G.S.M.

Eumarrah Bore. *See under* Artesian Bores. No. 415.

Eumundi Rail. Stn., 30 miles S.E. of Gympie. *Co.* Canning ; *Dist.* Moreton. *Railway Base* for Gold Mines at Mt. Ubi and Chinaman's Creek.

Eungella Goldfield—

Situation: *See maps,* Pls. 14, 15. About 10 miles W. of Finch Hatton Rail. Stn. (Mackay line), 48 miles (by rail and road) W.S.W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. Centre about *Lat.* 21° 6′ S.; *Long.* 148° 30′ E.

Area: 160,222 acres (nearly 251 sq. miles).

Population: Less than 20.

Proclamation: First, Nov. 8th, 1889. Last, Oct. 27th, 1909, as follows:—Commencing on the main coast range at the extreme head of Broken River, being the north-east corner of Eungella East O.L., and bounded thence on the south by that river downwards to a point bearing 83 degrees and distant one hundred and eighty-five chains from the north-east corner of Eungella Run; thence by a line bearing 211 degrees five miles and ten chains; thence by a line bearing 301 degrees about four miles and twenty chains to Broken River, by that river downwards to the western corner of Urannah No. 6, by the north-west boundary of that block north-easterly to its north corner; and thence by a line easterly to the point of commencement.

Principal Mining Centres: Bee Cr. Diggings.

Mineral Statistics: Gold, *included in* "Other Goldfields," *see maps,* Pls. 36, 46, 46a; *diagram,* Plate, 47.

Mineral References: Gold (alluvial) 3274, (reef) 4097-4103, 4105, 4106; Silver 7495, (native) 7560, (Tetrahedrite) 7773; Lead (Galena) 3003-3006; Copper (Bornite) 430, (Copper Pyrites) 2252a-2253, (Malachite) 6317a, 6318, 6322, (Tile Ore) 2567); Zinc Blende, 8166, 8166a; Iron (Iron Pyrites) 5289-5296, (Ironstone) 5583, (Limonite) 5883a-5883c, (Siderite) 7411a, 7411b. Zircon and *var.* Hyacinth, 8234.

Geological Note: The rocks are chiefly granite, in association with slate and schist. Gold-bearing reefs were worked many years ago and appear to have been small and highly mineralised. *See* G.S.Q. Pub. 181, p. 18 for details. Large quantities of small Zircons occur in the alluvial deposits.

Geological Publications: Reports—Nos. 54 (1889), 159 (1900), 181 (1903), 229 (1910). *See* Geol. Surv. Pub. List for titles.

Warden: Stationed at Mackay.

Inspector of Mines: Stationed at Rockhampton.

—— Range, 10 miles W. of Finch-Hatton. *Min.Ref.* Bornite, *see* 430; Copper Pyrites, 2254a; Native Silver, 7560; Tetrahedrite, 7773.

—— Run (Block 6), Broken R., W. of Mirani. *Min.Ref.* Gold, *see* 4104; Silver, 7497.

—— Stn., Broken R., W. of Mirani. *Min.Ref.* Garnet, *see* 3133; Hematite, 4756; Mica, 6562; Stilbite (?), 7653; Wolfram, 8034.

—— —— (1 mile E. of), Broken R. *Min.Ref.* Copper Pyrites, *see* 2252; Gold, 4107; Iron Pyrites, 5297.

Eu-No East Bore. *See under* Artesian Bores. No. 226.

Euraba Bore. *See under* Artesian Bores. No. 217.

Eureka Cr. *See maps,* Pls. 8, 9, 22. Rises 6 miles W.N.W. of Watsonville, passes near Stannary Hills Rail. Stn., and flows into the Walsh River. *Min.Ref.* Azurite, *see* 189; Cassiterite, 844-854; Chalcolite, 1405; Chlorite, 1430-1431; Copper carbonate, 1887; Fluorspar, 2658; Malachite, 6218; Pitchblende, 7068; Stannite, 7594-7595; Turgite, 7891; Wolfram, 7943-7944.

—— Reef, Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4097.

—— ——, 1 mile from Flannagan's, Croydon Goldfield. *Min.Ref.* Gold, *see* 3503; Hematite, 4690; Iron Pyrites, 4947; Limonite, 5802; Minium, 6576.

Eureka Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— ——, Normanby Goldfield. *Min.Ref.* Copper carb., *see* 1940; Gold, 4123; Iron Pyrites, 5302.

—— ——. Towalla Goldfield. *Min.Ref.* Gold, *see* 3781

—— Silver Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 47; Cerussite, 1267; Ironstone, 5572; Minium, 6612.

Eurella Station Sub-artesian Bores. *See under* Artesian Bores. No. 263.

Euri Cr., W.S.W. of Bowen. *Min.Ref.* Gold, *see* 4078; Molybdenite, 6858a; Tourmaline, 7861.

Eurinye Co. Gregory North Dist. *See map,* Pl. 20.

Eurora Run, 70 miles S.W. of Mackay. *Min.Ref.* Coal, *see* 1682.

Euthulla Sub-artesian Bores. *See under* Artesian Bores. No. 92.

Euston Group of Copper Mines. Cloncurry. *Include* Cameronian M.C. and Unnamed M.C. *Min.Ref.* Chrysocolla, *see* 1489A; Copper Pyrites, 2060A; Limonite, 5740A; Malachite, 6069A.

Eva Group of Copper Mines, Duck Cr., Cloncurry. *Includes* Eva, Jessie, and Captain M. Leases; Phoenix, Commonwealth, Huia, and Weka M. Claims. *Min.Ref.* Atacamite, *see* 126; Azurite, 165, 166; Calcite, 454, 455; Chlorite, 1423; Chrysocolla, 1498-1500; Copper Pyrites, 2079-2082; Dioptase, (?), 2581; Hematite, 4684; Iron Pyrites, 4924; Limonite, 5763, 5764; Malachite, 6116-6121; Redruthite, 7223-7227; Tile Ore, 2509-2513; Tourmaline, 7814.

—— M.L. (250), Cloncurry. *Min.Ref.* Azurite, *see* 166; Calcite, 454; Copper Pyrites, 2081; Iron Pyrites, 4924; Limonite, 5763; Redruthite, 7225; Tile Ore, 2511.

—— Extended M.L. (283), Cloncurry. *Min.Ref.* Calcite, *see* 455; Chlorite, 1423; Copper Pyrites, 2082; Malachite, 6118; Redruthite, 7226; Tile Ore, 2512.

Evan's (Meriwa) Sub-artesian Bore. *See under* Artesian Bores. No. 108.

Evesham Lease Bores. *See under* Artesian Bores. No. 264.

Evening Star Reef, New Homestead Diggings. *Min.Ref.* Gold, *see* 4068.

Evelyn Mine, 4 miles from Coolgarra. *Min.Ref.* Galena, *see* 2848.

—— Run, 11 miles S. of Herberton. *Min.Ref.* Apophyllite, *see* 83.

Evora Co. Mitchell Dist. *See maps*, Pl. 18.

—— Lease and Resumption Bores. *See under* Artesian Bores. Nos. 265, 266.

Ewan. (*See* Kangaroo Hills Mineral Field.)

—— and Delany's P. Area, Dargalong. *Min.Ref.* Anglesite, *see* 32; Cerussite, 1196; Galena, 2794; Massicot, 6527.

Examinations for Mining Managers. *See* Board of Examiners for, etc.

—— for Engine Drivers. *See under* Inspection of Machinery and Scaffolding Act.

Excelsior Silver-Lead Mine, Star R. (Argentine) Mineral Field. *Min.Ref.* Cerussite, *see* 1268; Gold, 4088; Ironstone, 5573; Lead Ochre, 5730; Malachite, 6312; Tenorite, 7732.

—— —— —— ——, Dargalong. *Min.Ref.* Anglesite, *see* 33; Cerussite, 1197; Hematite, 4714; Minium, 6584.

—— and Watson's Folly Amalgamated Tin-Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 896.

Exhibition Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

—— Reef, 6 miles N. of Gympie. *Min.Ref.* Galena, *see* 3090; Gold, 4543; Zinc-Blende, 8215.

Expedition Cr., W.byS. of Banana. *Min.Ref.* Coal, *see* 1659A.

Explorer Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Explosives. Absorbent material of first-class quality for the manufacture of explosives is furnished in the Tripolite found near the southern border of the State, where thick and extensive deposits occur containing all varieties in colour and in absorbing power.

Export of Coal. *See* note under Coal.

Export of Minerals from the State in 1912—

	Value. £		*Value.* £
Coal	64	Lead (matte)	1,059
Copper (matte)	572,548	Molybdenite ore	2,895
,, (ore)	4,693	Silver (matte)	11,430
Gems (Sapphire, Corundum) ...	20,149	Silver and Silver-lead ore ...	7,008
Gold (dust, ingot, and sheet) ...	17,207	Tin (ore)	135,479
,, (matte)	45,973	,, (concentrates)	6,472
,, (concentrates)	11,358	Wolfram ore	11,266
,, (specie)*	75,890	Zinc (concentrates)	152

* £55,730 exported to Hong Kong.

Eyre Co. Gregory North Dist. *See map*, Pl. 20.

F. Achilles Mine, Brovinia Goldfield. *Min.Ref.* Chrysocolla, *see* 1516; Gold, 3632; Jasper, 5638; Malachite, 6205.

Facing Is. *See also under* Port Curtis Islands.

Geological Note: Granite occurs at Gatcombe Head on the south end of the island, the other portion being made up of quartzites, shales, etc., belonging to the Devonian System.

Fahlerz. *Syn.* of Tetrahedrite, *which see. See also* Gray Copper Ore.

Fairbank Colliery, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1738c.

Fairbank's Gully, Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

Fairburn's Sub-artesian Bore. *See under* Artesian Bores. No. 303.

Fairfield Bore. *See under* Artesian Bores. No. 199.

Farleigh Sugar Mill Sub-artesian Bore. *See under* Artesian Bores. No. 320.

Fairlie Bore. *See under* Artesian Bores. No. 245.

Fairlight Resumption Bore. *See under* Artesian Bores. No. 267.

—— Stn., S.W.byW. of Cooktown. *Lat.*, 20° 35′ S.; *Long.*, 144° 14′ E. *Min.Ref.* Coal, *see* 1613-1616.

Fair-play Tin Mine, Koorboora. *Min.Ref* Cassiterite, *see* 943.

Fairview Bores *See under* Artesian Bores. Nos. 154, 239.

Faith (Just-in-Time) Reef, Normanby Goldfield. *Min.Ref.* Copper Carbonate, *see* 1941; Copper Pyrites, 2257; Gold, 4124-4125; Iron Pyrites, 5303; Mispickel, 6761.

Falconer's Reef, Big Hill, Talgai Goldfield. *Min.Ref.* Gold, *see* 3862.

Falls of Timburn, Amby Cr., nr. Kilmorey Stn. *Min.Ref.* Fontainbleau Sandstone, *see* 580.

Fanning Goldfield. *See* Far Fanning Gold Mines. Centre about *Lat.* 19° 45′ S.; *Long.* 146° 28′ E.

—— R. *See maps,* Pl. 16, 17. Heads at the Main Coast Range 30 miles S.W. of Townsville, and flows S., entering the Burdekin R. nr. Macrossan Bridge Rail. Stn., N.Q.R. *Lat.*, 19° 45′ S.; *Long.*, 146° 28′ E. *Min.Ref.* Limestone, *see* 721; Wolfram, 8031.

—— Stn., S.by.W. of Townsville. *Min.Ref.* Stalatitic Calcite, *see* 609.

Fanny Fern Mine, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2940; Gold, 4036; Iron Pyrites, 5252.

Far Emu Bore. *See under* Artesian Bores. No. 134.

Far Fanning Gold Mines, N.W. of Ravenswood. *Min.Ref.* Copper Pyrites, *see* 2222; Gold (alluvial), 3259, (reef) 3990-3995; Iron Pyrites, 5227-5229; Limonite, 5876; Mispickel, 6744. *See also under* Q.G.M.J., vol. 2, p. 406 (1901). Statistics *included in* Ravenswood.

Geological Note: The prevailing rocks are felsite and hard greenish sandstone, the former occurring as dyke masses in the latter. Small reefs or leaders occur in both the dyke formations and the hard sandstones. *See* G.S.Q. Pub. No. 133 for details and maps.

Fardowner Mine, California Cr. *Min.Ref.* Cassiterite, *see* 967.

Farewell Bore. *See under* Artesian Bores. No. 256.

Farm Cr., 3 miles E.N.E. of Tannymorel Rail. Stn. (Killarney line). *Min.Ref.* Coal, *see* 1631.

Farnon Downs Sub-artesian Bore. *See under* Artesian Bores. No. 293.

Farrar Co. Gregory North Dist. *See map,* Pl. 20.

Fassifern, 8 miles W. of Munbilla Rail. Stn. (Fassifern line). *Min.Ref.* Aragonite, *see* 91; Magnetite, 6031. Coal Measures belonging to the Walloon Series abound in this locality, with which are interbedded inferior coal seams, and calcareous sandstones and shales.

Fat Hen Cr. Mine, Gympie Goldfield. *Min.Ref.* Galena, *see* 3081; Silver, 7544.

Favosites Point, Hunter Island. *Min.Ref.* Fossiliferous Limestone, *see* 735.

Fayalite. *Syn.* Iron Chrysolite. *Compo.*, Silicate of iron. *Colour*, Greenish or brownish black. *H.* = 6·5. *Sp.gr.* = 4-4·1.

2622. —— in basalt. Mt. Tyson, 12 miles N.N.W. of Pittsworth Rail. Stn. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* L.C.B.

2623. ——. Cardwell, 85 miles N.W.byN. of Townsville. *Co.* Cardwell; *Dist.* **Kennedy North.** *Analysis:* Silica = 33·0 per cent.; Ferrous Oxide = 25·0 per cent.; Ferric Oxide = 40·0 per cent.; Alumina = 1·0 per cent.; Manganese = Trace; Water by diff. = 1·0 per cent. *Ref.* A.R., p. 41 (1906).

Fearaway Gully, Starcke Goldfield. *Min.Ref.* Gold (alluvial), *see* 3200B.

Federal Block G.M.L. (52), Eastern Boyne Goldfield. *Min.Ref.* Galena, *see* 3040; Gold, 4254.

—— Iron Bonus Commission. *See* G.S.Q. Pub. 190, pp. 12-15 (1904). *See under* Gov. Ming. Jour., Reports Nos. 18, 31; *also* G.S.Q. Pub. No. 180 (1902).

—— Colliery, Clermont Coalfield. *Min.Ref.* Coal, *see* 1668; Turgite, 7899.

—— ——, Oakey Cr., W.N.W. of Toowoomba. *Min.Ref.* Coal, *see* 1626.

—— Group of Copper Mines, Cloncurry. *Includes* only Federal R.C. *Min.Ref.* Azurite, *see* 150A; Copper Pyrites, 2060B; Limonite, 5740B; Malachite, 6069B.

—— M.L. (60), Ravenswood Goldfield. *Min.Ref.* Azurite, *see* 214A; Malachite, 6288A.

—— P. Area, Kilkivan. *Min.Ref.* Azurite, *see* 256; Malachite, 6379.

—— R.C. (52), Cloncurry. *Min.Ref.* Azurite, *see* 150A; Copper Pyrites, 2060B; Limonite, 5740B; Malachite, 6069B.

—— Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1043.

Federation Amalgamated Mine, Oak's View. *Min.Ref.* Gold, *see* 4312; Limonite, 5910.

—— Reef, Tabletop, Croydon Goldfield. *Min.Ref.* Cerussite, *see* 1187A; Gold, 3542; Ironstone, 5503; Pyromorphite, 7136.

—— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 897; Ironstone, 5523; Kaolin, 5678; Siderite, 7406.

Felspar. *Compo.*, Variable silicates of alumina with potash, lime, or soda, or with two or more of these substances. *Sp.gr.* = 2-3. *H.* = 6. *Varieties*—Albite, Andesine, Oligoclase, Orthoclase, *which see.* Many are referred to simply as "Felspars."

GEOLOGICAL NOTE: Commonly found in association with Hornblende, Mica, Tourmaline, and Quartz, in lodes containing Tin, Wolfram, Molybdenite, etc., the country being altered sedimentary rocks, slate, greywacke, granite, greisen, and quartz prophyry. No attempt has been made to mine or quarry Felspar for industrial purposes, but supplies are available for future requirements.

USES: Felspar is commonly utilised in the manufacture of pottery, and in earthenware and brick enamelling processes. It is also used to a limited extent as a binding material or flux in the manufacture of emery and carborundum grinding wheels, and some varieties are used as a source of potash.

2624. ——. *Assoc.with* Gold, Graphite (impure), and Iron Pyrites, in quartz. *Loc.* Caledonia Reef, 1 mile N.E. of Croydon Rail. Stn., 94 miles (by rail) S.E. of Normanton, Croydon Goldfield. *Co.* Surrey; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

2625. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Pride of the Hills Mine, 4½ miles N.E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

2626. ——. *Assoc.with* Iron Pyrites, in porphyry. *Loc.* Gebangle Goldfield, 3 miles up Yarabil Cr., 12 miles N.W. of Degilbo Rail. Stn. (Gayndah br. line). *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 60, p. 4 (1890).

2627. ——. *Assoc.with* Hornblende, Olivine, and Quartz, in altered sedimentary rocks. *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. 1 (1890).

2628. ——. *Assoc.with* Tourmaline. *Loc.* St. John's Cr. Goldfield, Burnett R., 16 miles S.W. of Eidsvold. *Co.* Wicklow; *Dist.* Burnett. *Ref.* G.S.M.

2629. ——. *Assoc.with* Cassiterite, Wolfram, Tourmaline, Mispickel, in quartz. *Loc.* Wright's Lease (99), Black Prince Lode, Mt. Hartley, 4 miles E. of Rossville, 26 miles S.S.E. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 66, p. 7 (1891).

2630. ——. *Assoc.with* Cassiterite, Iron Pyrites, and Tourmaline, in quartz lode. *Loc.* Lease (96), Mulligan's Gully, trib. of Jones's Cr., 1 mile S. of Rossville, 26 miles S. of Cooktown (*ante*). *Ref.* G.S.Q. Pub. 66, p. 5 (1891), and G.S.M.

2631. ——. *Assoc.with* Cassiterite, Mispickel, Tourmaline, and Mica, in decomposed rock. *Loc.* Harris and Party's Tin Lease, Rossville, 25 miles S. of Cooktown (*ante*). *Ref.* G.S.Q. Pub. 35, p. 16 (1887).

2632. ——. *Assoc.with* Mica, in granite. *Loc.* between Georgetown and Cumberland, about 20½ miles N.W.byN. of Charleston Rail. Stn., Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 7 (1887).

2633. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Boundary Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn., 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 13, p. 28 (1883), and G.S.M.

2634. ——. *Assoc.with* Wolfram and Cassiterite, in quartz. *Loc.* Dreadnought Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 26 (1883).

2635. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Great Western Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 27 (1883).

2636. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* King of the Ranges Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 28 (1883).

2637. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Queen of the West Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 26 (1883).

2638. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* St. Patrick's Day Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

2639. ——. *Assoc.with* Cassiterite and Fluorspar, in lode. *Loc.* Return Cr., br. of Herbert R., Coolgarra, 10 miles S.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 125, p. 41 (1897)

2640. —— (as crystals). *Assoc.with* Augite and Magnetite, in basalt. *Loc.* Great Basalt Wall, N. of Lolworth Cr., about 48 miles W. of Charters Towers. *Co.* Dalrymple; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 11 (1891)

2641 —— ——, in volcanic tuff. *Loc.* Mt. Leyshon, 16 miles S. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 18, p. 1 (1885).

2642. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Cherry Tree Cr., 28 miles S.E. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 53, p. 4 (1889).

2643. ——. *Assoc.with* Mica and Quartz. *Loc.* Corn Tweed Hill, nr. Homebush, 5 miles E. of Eton Rail. Stn., 28 miles (by rail and road) S.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 53. p. 8 (1889).

2644. —— (crystals). In volcanic tuffs. Pors. 746 and 1017, S. of Eton, 23 miles (by rail) S.W.byW. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 39, p. 1 (1887).

2645. —— ——. *Assoc.with* Gold, Iron Pyrites, Calcite, Siderite, and Steatite, in quartz. *Loc.* St. Catherine Reef, Yatton Goldfield, 21 miles S.W.byS. of St. Lawrence. *Co.* Killarney; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

2645A. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Bunker's Mine, Barmundoo (Tableland) Goldfield, 28 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 58, p. 6 (1890)

2646. ——. *Assoc.with* Biotite. *Loc.* Grevillia Cr., 8 miles S.S.W. of Benaraby (Annandale) Rail. Stn. (North Coast line), 22 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*).

2647. ——. *Assoc.with* Hornblende. *Loc.* Miriam Vale, 68 miles (by rail) N.W. of Bundaberg, on North Coast line. *Co.* Flinders; *Dist.* Port Curtis. *Ref.* G.S.M.

2648. ——. *Assoc.with* Mica, in mass of porphyry. Black Snake Goldfield, 10 miles S. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 28, p. 4 (1886).

2649. ——. *Assoc.with* Iron Pyrites, Hornblende, and Quartz. *Loc.* Alma Reef, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 52, p. 8 (1889).

2649A. ——. *Assoc.with* Magnetite and Olivine, in alluvial deposits. *Loc.* Mekeo (St. Joseph), 64 miles N.N.W. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 31 (1892).

2650. ——. *Assoc.with* Magnetite and Olivine, in alluvial deposits. *Loc.* No. 4 River, 85 miles N.N.W. of Port Moresby, Brit. New Guinea.

Fenian Creek Bore. *See under* Artesian Bores. No. 186.

Ferguson Co.; Leichhardt Dist. *See map*, Pl. 10.

Ferguson's Crossing, Calliope R., S.W. of Gladstone. *Min.Ref.* Marble, *see* 592.

Ferguson (Moratan) Is., Brit. New Guinea. *Min.Ref.* Cinnabar, *see* 1565; Gold (alluvial), 3422; Mineral Water, 6574; Sulphur, 7670.

Fermoy Co.; Mitchell Dist. *See map*, Pl. 18.

Fermoy (Opalton) Opal Field. *See under* Opalton Opal Field.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 157.

Ferguson's Bore. *See under* Artesian Bores. Nos. 154, 272.

Fernie Cr. Colliery, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1738D.

Fernlee Lease Bore. *See under* Artesian Bores. No. 268.

Ferro-Calcite. *Var.* of Calcite, *which see.*

Fertilizers. *See* Phosphates, Limestone, Gypsum.

Fibrolite. *Syn.* Sillimanite, *which see.*

Fiddler's Cr. Leads, Clermont. *Include* Boozers, St. Patrick's, True Blue, Shearer's Gully, and Chinaman's Gully Leads. *Min.Ref.* Gold (alluvial), *see* 3321A.

Fields controlled by Wardens. *See under* Wardens.

Fielding Co.; Burke Dist. *See map,* Pl. 20.

Fiery Cr., Etheridge Goldfield. *Min.Ref.* Anglesite, *see* 21A; Cerussite, 1189A Malachite, 6215A; Massicot, 6525A.

—— ——, trib. of Leichhardt R., S. of Burketown. *Min.Ref.* Manganese-dioxide, *see* 6388.

Fiery Creek Opal Field—

Situation: *See maps,* Pls. 18, 19. Twenty-five miles N.N.W. of Yowah, 85 miles W.N.W. of Cunnamulla. *Co.* Wellington; *Dist.* Warrego. Centre about *Lat.* 27° 35′ S.; *Long.* 144° 20′ E.

Population: Under 20.

Principal Mining Centres: Fiery Cross Opal Workings.

Mineral Statistics: Opal. *Included in* Paroo Mineral Field. *See* Pls. 44, 46-46A.

Mineral Reference: Opal (precious), 6967.

Geological Note: *See under* Paroo Mineral Field.

Geological Publications: Report—No. 177 (1902). *See under* Geol. Surv Pub. List for title and map.

Warden: Stationed either at Thargomindah or Cunnamulla.

Inspector of Mines: Stationed at Gympie.

—— Star Tin Mine, Mt. Amos, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 791; Tourmaline, 7829.

Fig-tree Bore. *See under* Artesian Bores. No. 195.

Fig Tree Prov. Goldfield. Thirty-six miles S.W.byS. of Gladstone (North Coast line). *Min.Ref.* Gold, *see* 4259A.

Filly Flat (Min. Sel. 1822), Marodian Goldfield. *Min.Ref.* Copper Pyrites, *see* 2323; Felspar, 2649; Olivine, 6932; Orthoclase, 7052.

Finch-Hatton (Cattle Cr. Tramway, Mackay line), 38 miles W.S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Railway Base* for Eungella and Nebo Goldfields. *Min.Ref.* Malachite, *see* 6323.

—— —— (nr.), W.S.W. of Mackay. *Min.Ref.* Azurite, *see* 229C; Limonite, 5885A; Malachite, 6326A; Silver, 7500A.

Fine Gold Cr., Agate Downs Goldfield, Cloncurry. *Min.Ref.* Gold, *see* 3464, 3466.

Fingertown, 9 miles N. of Nymbool. *Min.Ref.* Biotite, *see* 305; Chalcolite, 1407A; Monazite, 6874; Topaz, 7786; Wolfram, 7945.

Finlayson Hills, 22 miles N.W. of Mackay. *Min.Ref.* Sanidine, *see* 7054.

Finnegan's Tin Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 808.

Fire Cr., trib. of Raglan Cr., Raglan Goldfield. *Min.Ref.* Gold (alluvial), *see* 3389.

Fire-resisting Material. *See* Asbestos, Bauxite, Chromite, "Fireclay," Graphite, Kaolin, Magnesite, Tripolite, Talc and *var.* Steatite.

Fireclay. *See also* Kaolin, and notes under Clay.

2650A.——. Sandy Cr., close to Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 148, p. 6 (1900).

2651. —— (Kaolin in part). In Mesozoic Strata on the range nr. Mt. Morgan, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* **Port Curtis.** *Ref.* B.D.

2651A.——. Nr. Mt. Victoria, 3 miles W.S.W. of Mt. Morgan Rail. Stn. *Co.* Raglan (*ante*). *Ref.* G.S.M. and A.R., p. 4 (1912).

2651B.——. Munduran Firebrick, Tile, and Pottery Proprietary, Ltd., about 19 miles S.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Analysis: See* Table under Clay.

Firedamp (CO$_2$) in Bores. *See under* Artesian Bores and Notes, Nos. 66, 269B, 374, 382, 439.

Fiorite. *Syn.* Siliceous sinter. *Var. of* Opal, *which see.*

First Call P.C. and 1 S.E. Mines, Cocoa Cr., N.N.W. of Cooktown. *Min.Ref.* Gold, *see* 3662, 3663; Stibnite, 7613, 7614.

Fisher's Sel. 121, ¾-mile W. of Beenleigh. *Min.Ref.* Gold, *see* 4225; Mispickel, 6781.

—— Cr., Cloncurry. Rises 8 miles E. of Cloncurry, and flows E.N.E. into Canal Cr. 25 miles E.N.E. of Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2064; Gold (alluvial) 3171, (reef) 3457; Limestone, 618; Siderite, 7400, 7401; Tourmaline, 7812, 7813.

—— —— and Pumpkin Gully (between), Cloncurry. *Min.Ref.* Calcite, *see* 450; Gold, 3456; Hematite, 4673; Siderite, 7401.

Fisherton. *See maps,* Pls. 8, 9, 22. Tate R., 24 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line). *Lat.,* 17° 28′ S.; *Long.,* 144° 25′ E. The centre of the Tate R. tin and wolfram mines. *Min.Ref.* Bismutite, *see* 393; Rutile, 7328; Sphere, 7573; Spinel, 7575; Wolfram, 7965; Zircon, 8219. *See* other references and notes under Tate Goldfield and Tate River.

GEOLOGICAL NOTE: Rocks are quartzites and schists, carrying tin, wolfram, and other minerals in quartz lodes.

Fitzgerald's M.F. (1408), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235F; Hematite, 4769E; Malachite, 6339I; Mispickel, 6771A.

Fitzpatrick Bore. *See under* Artesian Bores. No. 208.

Fitzroy. Par of (Pors. 22v and 95v), Olsen's Caves. *Min.Ref. see* Garnet Rock, 3143A; Hematite, 4791; Magnetite, 6045, 6046.

Fitzroy Co.; Burnett Dist. *See map,* Pl. 4.

—— (Par. of), (Pors. 22v and 95v). Olsen's Caves. *Min.Ref.* Garnet Rock, *see* 3143A; Hematite, 4791; Magnetite, 6045, 6046.

Fitzroy River, formed by junction of Mackenzie and Dawson Rivers, 50 miles W.S.W. of Rockhampton, flows E.N. and S.E. into Keppel Bay 30 miles E.S.E. of Rockhampton. Length, about 150 miles. First navigated in 1855. *Min.Ref.* Analcime, *see* 12; Chromite, 1484; Limestone, 682, 683. *See also* Supplementary Report List, No. 65.

Five Corners Bore. *See under* Artesian Bores. No. 229.

Five-mile Bore. *See under* Artesian Bores. No. 141.

—— —— Cr., 8 miles S. of Cardwell. *Min.Ref.* Cassiterite, *see* 1149.

—— —— ——, br. of Rocky Tate River. *Min.Ref.* Cassiterite, *see* 939.

—— —— Dam Bore. *See under* Artesian Bores. No. 240.

—— —— Springs Bore. *See under* Artesian Bores. No. 229.

—— —— or Callide Cr. Old Copper Workings, Kroombit. *Min.Ref.* Copper carbonate, *see* 1961; Copper Pyrites, 2306; Hematite, 4799; Iron Pyrites, 5414; Hornblende, 4868; Magnetite, 6054; Manganese-dioxide, 6480.

Flaggy Cr., br. of Wild R., S.S.W. of Herberton. *Lat.,* 17° 27′ S.; *Long.,* 145° 26′ E. *Min.Ref.* Albite, *see* 1.

Flagstone Bore. *See under* Artesian Bores. No. 195.

—— Cr. Runs N.N.E. into Albert R., 2 miles S.W. of Tamborine. *Min.Ref.* Coal, *see* 1783.

—— ——. Bowen R. Coalfield. *Min.Ref.* Galena, *see* 2957A.

—— ——. Helidon. *Min.Ref.* Coal, *see* 1718, 1723, 1723A.

Flanagan's Mining Centre, Croydon Goldfield. *Includes* C.D. Roe, Wanderer, Parnell, Eureka, King of the Springs, Democrat, Wild Irishman or Queen of the Springs, and Duchess Reefs. *Min.Ref.* Galena, *see* 2710; Gold, 3501-3504; Graphite, 4580; Hematite, 4690; Iron Pyrites, 4945-4947; Limonite, 5802; Minium, 6576.

—— Tin Claim, Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 764.

Flaneur M.L. (655), Cloncurry. *Min.Ref.* Limonite, *see* 5810; Malachite, 6171; Redruthite, 7260; Tile Ore, 2530.

Flat Top Range, nr. Balnagowan Stn., E. of Rockhampton. *Min.Ref.* Chlorite, *see* 1466; Chromite, 1483; Penninite, *var.* Rhodochrome, 7065.

Fletcher's Sel. (29), Jibbinbar. *Min.Ref.* Copper Pyrites, *see* 2182; Gold, 3832; Mispickel, 6710; Silver, 7470.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 263.

Flinders, on the Ipswich-Fassifern Rail. line. *Min.Ref.* Limestone, *see* 664A; Dolomite, 2584A.

Flinders Co.; Port Curtis Dist. *See map*, Pl. 2.

—— Group (Stanley Is.), N.W. of Cooktown. *Min.Ref.* Coal, *see* 1612B.

Flinders River. Heads at the Main Dividing Range 55 miles N.E. of Hughenden, and flows S.W. to Hughenden, thence N.W. into Gulf of Carpentaria 70 miles E. of Burketown. Length, about 450 miles. See *Lat.* 24° 30′ S.; *Long.* 151° 4′ E. Discovered in 1841 by Stokes. *Min.Ref.* Clay Deposits, *see* 1567; Coal, 1598; Hematite, 4679; Ironstone, 5508; Limestone (Coralline), 623.

Flinders River Coal Measures—

Situated: *See maps*, Pls. 20, 21. Left bank of Flinders R., 18 miles N.W. of Warreah (Coalbrook) Rail. Stn. (Hughenden line). *Co.* Wongalee; *Dist.* Burke.

Geological Note: The Coal Measures belong to the "Rolling Downs" Formation. A coal seam 1 ft. in thickness has been observed, but there are several others a few inches thick. *See* G.S.Q. Pub. No. 44 for details.

—— Shire Council Bores. *See under* Artesian Bores. Nos. 123, 124.

Flint. Said to occur with limestone in some of the Artesian bores in the Cretaceous beds of Western Queensland. *See* Artesian Bores and Notes. No. 157.

Floatstone. *Var.* of Opal, *which see.*

Flora Point, Rodd Peninsular. *Min.Ref.* Magnetite, *see* 6043.

Floraville (15 miles from), Leichhardt R., 40 miles S.S.E. of Burketown. *Lat.*, 18° 14′ S.; *Long.*, 139° 55′ E. *Min.Ref.* Porcellanite, *see* 5660.

Florence, Cloncurry. *Min.Ref.* Barytes, *see* 264A.

—— Creek Sub-artesian Bore. *See under* Artesian Bores. No. 286.

—— River. Rises about 38 miles S.byE. of Cloncurry, and flows W.byN. into the Cloncurry R. about 33 miles S.S.W. of Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3176.

Florence River Copper Mines, Cloncurry. *Include* McPhail N., McPhail S. Extd., Edmonson, Dodger, Bobby Dazzler Extd., Frances Extd., United Extd., Our Luck, Myall King Extd., Eclipse, Lady Mary Extd., Theresa, Juno Extd., Queen Cross, Vivian, Gem and Mt. Flanagan M. Claims, Better Luck M.L., Lottery P.A., and Orion's Belt P.A. *Min.Ref.* Calcite, *see* 456; Chrysocolla, 1501; Copper Pyrites, 2083; Copper (native), 1979; Ferro-Calcite, 573; Iron Pyrites, 4925; Limonite, 5765; Malachite, 6122; Redruthite, 7228; Turgite, 7885.

Flori's Copper Lode, Perry Scrub. *Min.Ref.* Malachite, *see* 6194; Turgite, 7886.

Fluo-silicate of aluminium, *see* Topaz.

Fluoride of Lime, *see* Fluorspar.

Fluorine (F.). *Atom.Wt.* 19·0. *Sp.gr.* 1·14. (Liquid).

Minerals: *See* Fluorspar, Topaz.

Fluorite. *Syn.* Fluorspar, *which see.*

Fluorspar. *Syn.* Fluorite. *Compo.*, Fluoride of lime. *Colour*, green, white, blue, etc. *H.* = 4. *Sp.gr.* = 3·0-3·2. *Contents* (*max.*), Fluorine 49 per cent.

Geological Note: Large deposits of Fluorspar are unknown, but the mineral is common in tin and wolfram lodes in North Queensland, and sometimes occurs as small veins a few inches thick unassociated with any other mineral. It is almost invariably of a green colour, the blue, purple, and other shades being rare.

Uses: *See note under* Calcium.

2652. —— (green), in quartz. Content Reef, 3 miles N.W. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

2653. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Calcite, and Argentine, in altered granite. *Loc.* Plant's Shaft, Golden Gate Gold Mines, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 202, p. 26 (1905).

2654. ——. *Assoc.with* Calcite, Siderite, and Serpentine, in granite. *Loc.* Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 202, p. 10 (1905).

2655. ——. *Assoc.with* Gold, Iron Pyrites, Calcite, and Pinite, in quartz reef. *Loc.* Daisy Mine, Coen Goldfield, 45 miles (by road) N.N.W. of Port Stewart, 189 miles N.W. of Cooktown. *Co.* Coen; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 163, p. 20 (1901), and G.S.M.

2656. ——, in small veins in granite. Delaney River, ¼-mile above Charleston, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* B.D.

2657. ——, Bakerville Mine, 5 miles S.W. of Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Field. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 65 (1900).

2658. ——. *Assoc.with* Cassiterite. *Loc.* Gladstone Mine, Eureka Cr., nr. Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 54 (1887).

2659. ——. *Assoc.with* Cassiterite. *Loc.* Crœsus Tin Mine, Irvinebank, 10 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe Br. line), 12 miles W.S.W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

2660. ——. *Assoc.with* Cassiterite. *Loc.* Lass o' Gowrie Mines, 1 mile N. of Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 54 (1900).

2661. ——. *Assoc.with* Cassiterite, Iron Pyrites, Chalcanthite, Wolfram, and Chlorite. *Loc.* Glencairn Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 23 (1883), and 125, p. 40 (1897).

2662. ——. *Assoc.with* Cassiterite, Copper Pyrites, Cuprite, Azurite, Malachite, Iron Pyrites, Mispickel, Stannite, Wolfram, Ironstone, and Chlorite. *Loc.* Stewart's T. Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 26 (1883), and 119, p. 15 (1897)

2663. ——. Dargalong, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 65 (1900).

2664. ——, Girofla Mine, Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 65 (1900).

2665. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Malachite, Azurite, Chrysocolla, and Garnet, in felspathic rock. *Loc.* Dorothy Mine, Opera Cr., 1½-mile S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 2 (1891), and P.R.S.Q., vol. 15, p. 51 (1900).

2665A.——. *Assoc.with* Andradite, Garnet, and Calcite. Dorothy Mine, Opera Cr. (*ante*). *Ref.* B.D.

2665B.——. *Assoc.with* Mispickel. *Loc.* Ord (Mt. Garnet Br. line), 120 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook.

2666. ——. *Assoc.with* Cassiterite, Iron Pyrites, Hematite, Göthite, Limonite, Mispickel, Wolfram, Azurite, Malachite, Penninite, Chlorite, Topaz, and Websterite, in quartz lode. *Loc.* Coolgarra Tin Mines, Return Cr., Coolgarra, 9 miles N.N.E. of Mt. Garnet Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

2666A.——. *Assoc.with* Cassiterite and Copper Pyrites, in chloritic lode. *Loc.* Lottie Mine, Coolgarra (*ante*). *Ref.* O.R. (1909).

2667. ——. *Assoc.with* Felspar and Cassiterite, in lode. *Loc.* Return Cr., br. of Herbert R., Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 125, p. 41 (1898).

2668. ——. Little Susie Mine, Dry R., br .of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North.

2669. ——. *Assoc.with* Cassiterite and Wolfram. *Loc.* Bradlaugh Mines, 1 mile E. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 54 (1900).

2670. ——. *Assoc.with* Cassiterite, Wolfram, and Serpentine, in quartz lode. *Loc.* Defiance Tin Claim, Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 16 (1883), and P.R.S.Q., vol. 4, p. 71 (1887).

2671. ——. *Assoc.with* Cassiterite, in chlorite. *Loc.* Erin-go-bragh Tin Claim, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 5 (1883).

2672. ——. *Assoc.with* Cassiterite, in quartz lode. *Loc.* Great Eastern No. 1 Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 7 (1883).

2673. Fluorspar. *Assoc.with* Cassiterite, in lode. *Loc.* Great Northern Tin Mine, Herberton (*ante*). *Ref.* B.D.

2674. ——. *Assoc.with* Cassiterite. *Loc.* Hickey's Mine, Herberton (*ante*). *Ref.* Q.M.

2675. ——. *Assoc.with* Cassiterite and Iron Pyrites. *Loc.* Levant Tin Claim, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 14 (1883).

2676. ——. *Assoc.with* Cassiterite, Wolfram, and Iron Pyrites, in quartz and chlorite. *Loc.* Leviathan Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 14 (1883), and P.R.S.Q., vol. 4, p. 56 (1887).

2677. ——. *Assoc.with* Cassiterite and Wolfram, in quartz lode. *Loc.* Nova Scotia Mine, Herberton (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 13, p. 11 (1883).

2678. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Poor Stroller Tin Mine, Herberton (*ante*).

2679. ——, Stenhouse Mine, Newellton, 9 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 125, p. 41 (1898).

2680. ——. *Assoc.with* Cassiterite. *Loc.* Cardigan Tin Syndicate's Mines, Thompson's Cr., 10 miles S. of Watsonville, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 44 (1898).

2681. ——. *Assoc.with* Cassiterite and Wolfram. *Loc.* Wild R. Tin Mines, about 4 miles S. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 9, p. 157 (1881).

2682. ——. Fort Hill (Castle Hill), at Townsville, 854 miles N.W. of Brisbane. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.M.

2683. ——. *Assoc.with* Cassiterite and Mispickel, in chloritic lode. *Loc.* New Chum Lease (194), Butterfly Gully, Mt. Brown, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

2684. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Manganese-dioxide, Zinc Blende, Smithsonite, Mispickel, Hematite, Ironstone, and Garnet. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

2684A. ——. *Assoc.with* Wolfram, in lode. *Loc.* Krumholz's Lease, Running R., Kangaroo Hills Mineral Field (*ante*). *Ref.* O.R.

Flux material. *See* notes under Limestone, Ironstone, Fluorspar.

Fly R., Brit. New Guinea. *Min.Ref.* Beryl, *see* 298; Coal (*var.* Lignite), 1832; Gold (alluvial), 3423; Topaz, 7809.

Flying Dutchman, Pumpkin Gully, Cloncurry. *Min.Ref.* Copper carbonate, *see* 1873; Gold, 3454; Tetrahedrite, 7752.

—— Pig Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Flynn's Bore. *See under* Artesian Bores. No. 293.

Flyspeck, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Coal, *see* 1672; Gold (alluvial), 3323.

Foley's Tin Mine, Stanhills Goldfield. *Min.Ref.* Cassiterite, *see* 767.

Fontainbleau Sandstone. *Var. of* Calcite, *which see.*

Foraminiferal Chalk. *Var. of* Calcite, *which see.*

Ford's (*see* Clare Valley) Bore. *See under* Artesian Bores. No. 332.

Forest Gate Farm (Pors. 27 and 81v), Mt. Davidson. *Min.Ref.* Calcite, *see* 525A; Chabazite, 1316; Magnesite, 5953; Natrolite, 6902. *See also under* Q.G.M.J., vol. 12, p. 174 (1911).

Forest Vale Station, Maranoa River. *Min.Ref.* Coal, *see* 1706A.

Forget-me-not Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Fort Constantine Leases Bores. *See under* Artesian Bores. No. 269.

Fort Cooper, Mackay District. *See* Nebo.

Fort Hill (Castle Hill), Townsville. *Min.Ref.* Fluorspar, *see* 2682.

Fortescue Co. Leichhardt Dist. *See map*, Pl. 10.

Fortunatus Mine, Mt. Perry. *Min.Ref.* Copper Pyrites, *see* 2125.

—— ——, Chillagoe Cr., Chillagoe. *Min.Ref.* Copper Pyrites, *see* 2168A; Galena, 2790.

Forty-one mile Peg (Cooktown Railway). *Min.Ref.* Coal, *see* 1610.

Fossil Resin. *Syn.* Retinite, *which see.* Small masses of fossilized resin from pine trees have been found in the scrub country around Atherton, and mining for "gum" was proposed as an industry in that district. The matter has not been seriously considered, and no action has been taken to determine the extent of the deposits.

Fossilbrook—

Situation: *See maps*, Pls. 8, 9, 22. 38 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook. *Lat.*, 18° 2′ S.; *Long.*, 140° 30′ E.

Discoveries: Dates for Tin and Wolfram not obtainable. Monazite in association with Tin was found at Emu Cr., in 1904, by B. Dunstan.

Population: Included in Chillagoe Gold and Mineral Field.

Principal Mining Centres: Blackfellow's Creek, Four-mile Mountain, Night Shade, Tableland, Spring Cr., Pinnacles Cr., Eight-mile Mountain, *which see.*

Mineral References: Lead (Galena), *see* 2814; Copper (Azurite), 202, (Malachite) 6245; Tin (Cassiterite), 966, 968; **Wolfram,** 7978; Columbite, 1838; Zinc-Blende, 8090; Ilmenite, 4895a; Rutile, 7331, 7331a.

Geological Note: The country is made up of granite of various kinds, together with greisen, felsite, quartz-felsite, aplite, and schists. In these rocks there are deposits of tin, wolfram, and other minerals.

Geological Publications: Report No. 134 (1898), Map No. 220 (1909). *See under* Gov. Surv. Pub. List for title.

Warden: Stationed at Chillagoe. Inspector of Mines: Stationed at Herberton.

—— Stn. (Firths), on Fossilbrook Cr. (br. of Lynd R.). *Min.Ref.* Cassiterite, *see* 940a.

Fossiliferous Limestone. *Var. of* Calcite, *which see.*

Found-at-Last Gold Mine, Gladstone. *Min.Ref.* Gold, *see* 4295b; Hematite, 4787a; Silver, 7527a.

Fountain's Sel., about ½-mile N. of Burpengary Cr. *Min.Ref.* Coal, *see* 1760a.

Four-mile Creek Artesian Bore. *See under* Artesian Bores. No. 200.

—— —— Camp, Ryan's Cr., Hamilton Goldfield. *Min.Ref* Gold (alluvial), *see* 3211; Hypersthene, 4878.

—— —— Cr., nr. Moonmera. *Min.Ref.* Garnet, *see* 3169; Gold (alluvial), 3403.

—— —— ——, North Pine. *Min.Ref.* Stibnite, *see* 7649.

—— —— —— (br. of Tate R.), nr. Fisherton. *Min.Ref.* Cassiterite, *see* 940.

—— —— Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 3331-3332.

—— —— Mining Centre, Ravenswood Goldfield. *Includes* Old Man and Beaumont Reefs. *Min.Ref.* Gold, *see* 4011a.

—— —— Mt., 4 miles N.W. of Fossilbrook. *Min.Ref.* Bismutite, *see* 398; Cassiterite, 967; Molybdenite, 6844; Wolfram, 7979.

—— —— and Elphinstone Crs. (1 mile W. of junction of), Upper Burdekin. *Min.Ref.* Siderite, *see* 7409.

Fourth of July Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Fourteen Miles Sub-artesian Bore. *See under* Artesian Bores. No. 339.

Foxhall Selection Bore. *See under* Artesian Bores. No. 154.

Fox's Lead, Black Ridge, Clermont. *Min.Ref.* Gold (alluvial), *see* 3307.

Foxton Co. Kennedy South Dist. *See map*, Pl. 14.

Foyle View Lease Bore. *See under* Artesian Bores. No. 170.

Frampton Lease, Norton Goldfield. *Min.Ref.* Bornite, *see* 433; Iron Pyrites, 5371.

—— Reef, Norton Goldfield. *Min.Ref.* Galena, *see* 3047a; Gold, 4274; Iron Pyrites, 5373; Mispickel, 6791; Zinc-Blende, 8192.

—— United Mine, Norton Goldfield. *Min.Ref.* Calcite, *see* 532; Galena, 3047; Gold, 4273; Iron Pyrites, 5372; Zinc-Blende, 8191.

Francis (Myendetta) Bore. *See under* Artesian Bores. No. 205.

Franklen Co. Cook Dist. *See map*, Pl. 8.

Fraser Co. Wide Bay Dist. *See map*, Pl. 4.

Frazer Island. Situated between *Lat.* 24° 40′ S. and 25° 50′ S., and *Long.* 53° E. and 53° 20′ E., and forming in part the eastern shore of Hervey Bay. The island is 78 miles long and about 16 miles wide at its greatest width *Co.* Fraser; *Dist.* Wide Bay.

Geological Note: Recent blown sand, together with black, grey, and white sandrock, and Upper Cretaceous shales and sandstones are the formations on the island. Some of the Cretaceous rocks are marine, but freshwater beds might also occur. The black sandrock seen in many places has given the impression to many that coal beds might exist on the island, but no authenticated discovery of coal has yet been made.

Frederick Reef, Magnetic Island. *Min.Ref.* Gold, *see* 3998.

—— I. Reef, Normanby Goldfield. *Min.Ref.* Copper Pyrites, *see* 2258; Gold, 4126; Mispickel, 6762; Marcasite, 6509.

Freedom of Contract Nos. 1, 2, 3 Mines, 6½ miles N.E.byN. of Witherfield. *Min.Ref.* Azurite, *see* 234A; Bornite, 430B; Ironstone, 5598; Limonite, 5894; Malachite, 6334, 6335; Magnetite, 6026A.

Freehold Bore. *See under* Artesian Bores. No. 184.

Freehold Estate, Mt. Perry. *Min.Ref.* Tourmaline, *see* 7819.

Freestone Cr., flows W. into Glengallan Cr., N.N.E. of Warwick. *Min.Ref.* Coal, *see* 1636; Gold, 3873; Chabasite, 1312A.

Freethinker Tin Claim, Irvinebank. *Min.Ref.* Cassiterite, *see* 862; Galena, 2766.

French Chalk. *Syn.* Steatite, *var.* of Talc, *which see.*

French's Cr., Towalla Goldfield. *Min.Ref.* Gold, *see* 3789; Iron Pyrites, 5083.

Frenchman's Plains Coal Mines. Situated on Blackwater Cr., N.E. of Blackwater Stn., Central Rail. line. *See maps*, Pls. 10, 11, 33. *Min.Ref.* Coal, *see* 1688A.

Geological Note: *See under* Mammoth Coal Mines.

Freshwater Limestone. *Var. of* Calcite, *which see.*

Friday Gully, Talgai Goldfield. *Min.Ref.* Gold (alluvial), *see* 3253.

—— Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6945.

Friedman's Cr., Cloncurry. *Min.Ref.* Bornite, *see* 414; Calcite, 461; Copper Pyrites, 2101; Hematite, 4687; Iron Pyrites, 4931; Limonite, 5792-5797; Malachite, 6154-6157; Muscovite, 6884; Redruthite, 7251-7252; Tile Ore, 2528.

Friend's Mine, Barmundoo (Tableland) Goldfield. *Min.Ref.* Copper Pyrites, *see* 2281; Galena, 3036; Iron Pyrites, 5354; Zinc Blende, 8179.

—— ——, Norton Goldfield. *Min.Ref.* Galena, *see* 3047B; Gold, 4275; Iron Pyrites, 5374.

—— Sel. (26v), (Bushley Rail. Stn.). *Min.Ref.* Coal, *see* 1794. *See also* Bushley Bore, *under* Coal Bores.

Friendly Springs Bore. *See under* Artesian Bores. No. 141.

Friezland Mining Centre, Cloncurry. All information is given under Hampden, the old name.

Fry and Stoodleigh's Mine, Maxwelton Goldfield. *Min.Ref.* Molybdenite, *see* 6862.

Fryar (William), late Chief Inspector of Mines—

Report on Mining in the Stanthorpe District.	Q.G.M.J., vol. 4, p. 207.	1903
,, ,, Coal Mines in the Ipswich District.	Q.G.M.J., vol. 4, p. 657.	1903
,, ,, Sinking for Coal, Logan District.	Q.G.M.J., vol. 5, p. 296.	1904

Fryar (A. E.), late Inspector of Mines—

Report on Morinish and Blackfellow's Gully.	Q.G.M.J., vol. 4, p. 312.	1903

Fulford Cr., br. of Lynd R., S.W. of Fisherton. *Min.Ref.* Cassiterite, *see* 830A; Wolfram, 7935A.

Fulgurites. These are made up of fused quartz grains, and are the result of lightning strokes in sand. They form very irregular tubes, rough outside and glazed inside, with numerous branches striking downward like the roots of a tree. The diameter of the fulgurites vary from one inch to a mere thread. They are commonly found at Southport, Tweed Heads, Stradbroke, Moreton, Curtis, and Fraser Islands, and Noosa Heads, and probably also occur on many other parts of the coast where large accumulations of blown sand exist.

2685. ——. In sand dunes. Stradbroke Is., 24 miles E. of Brisbane, Moreton Bay. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* G.S.M.

2686. ——. In sand dunes. Tangalooma Point, 30 miles N.E. of Brisbane, Moreton Bay (*ante*). *Ref.* B.D.

2687. ——. Sand Hills, nr. Southport, 50 miles (by rail) S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.M.

2687A. ——. *Loc.* Hillock of sand, close to beach, 1 mile S. of Double Island Point, south of Wide Bay. *Co.* March; *Dist.* Wide Bay. *Ref.* B.D.

Fullarton Bores. *See under* Artesian Bores. Nos. 160, 161, 242.

—— R., Cloncurry. *Min.Ref.* Gold, *see* 3450B; Tourmaline, 7811.

Fuller's Cr., Boyne R., S. of Gladstone. *Min.Ref.* Limestone, *see* 593.

Funker's Gap Cr., trib. of Quart Pot Cr., rises about 3½ miles N. of Stanthorpe, and passing through the town falls into Quart Pot Cr. on the W. side of Stanthorpe. Length, about 3½ miles. *Min.Ref.* Cassiterite, *see* 983.

Funnel Cr., Nebo. *Lat.* 22° 13′; *Long.*, 148° 56′. *Min.Ref.* Cobalt, *see* 1835; Copper Ore, 2042.

Furbur and White's Claim, Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 759.

Furnace linings. *See* Beauxite, Chromite, "Fireclay," Kaolin, Magnesite.

Fusyama Bore. *See under* Artesian Bores. No. 142.

Gable End Sub-artesian Bore. *See under* Artesian Bores. No. 135.

Gaeta Goldfield. *See maps*, Pls. 4, 5.

SITUATION: Thirty miles N.byW. of Mt. Perry Rail. Stn. *Cos.* Bowen and Yarrol; *Dists.* Burnett and Wide Bay. Centre about *Lat.* 24° 58′ S.; *Long.* 151° 30′ E. This field, many years ago, was known as the Molangool Goldfield.

DISCOVERY: Probably 1898. AREA: 928 acres (1½ sq. mile).

AREA: 928 acres (1½ sq. mile).

PROCLAMATION OF FIELD: First (and only one) gazetted, 26th October, 1898, as follows:—Commencing at the south-east corner of Pre-emptive 1 No. 553, and bounded thence on the north by the south boundary of that portion bearing west; on the west by the east boundary of Pre-emptive 2 No. 554, and a line bearing south about ninety chains; on the south by a line bearing east to the south-west corner of portion 3V; and on the east by the west boundary of that portion northerly and north-westerly to the point of commencement.

MINERAL STATISTICS: Gold, *included in* "Other Goldfields" *in tables and diagrams*, Pls. 36, 46, 46A, 57.

MINERAL REFERENCES: **Gold**, *see* 3574, 3574A; Silver, 7429; Iron (Iron Pyrites) 4974-4975A, (Limonite), 5827. Other Minerals: Barytes, 265; Epsomite, 2612; Gypsum, 4613; Tourmaline, 7818.

GEOLOGICAL NOTE: The country rock is granite.

GEOLOGICAL PUBLICATIONS: *See under* Govt. Mining Jour., Report—No. 22.

WARDEN: Stationed at Mt. Perry.

INSPECTOR OF MINES: Stationed at Rockhampton.

Gahn's Flat, Capeville, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3265.

Galah Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 293.

—— Gorge, 44 miles N.E. of Hughenden. *Min.Ref.* Coal, *see* 1598A.

Galena. *Syn.* Lead glance. *Compo.*, Sulphide of lead. *Colour and Streak*, lead-grey. Cubical cleavage. *H.* = 2·5-2·7. *Sp.gr.* = 7·2-7·7. *Contents* (*max.*), Lead 86 per cent.

NOTE: For Associated Minerals and Rocks, *see under* Lead.

2688. —— (Argentiferous), nr. Gregory Downs Stn., 70 miles S.S.W. of Burketown. *Co.* Burke; *Dist.* **Burke.** *Ref.* G.S.M.

2689. ——. *Assoc.with* Zinc-Blende, Copper Pyrites, Iron Pyrites, and Cassiterite, in chloritic quartz and greisen. *Loc.* Brilliant P.C. Mine, Stanhills Tinfields, 12 to 24 miles S.E. of **Croydon.** *Co.* Esmeralda; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, p. 6 (1907).

2690. ——. *Assoc.with* Zinc Blende, Cassiterite, Copper Pyrites, Azurite, and Malachite in chlorite. *Loc.* Comet Tin Mines, N. of Ten Mile Cr., nr. Esmeralda Rd., Stanhills Tinfields (*ante*). *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

2691. ——. *Assoc.with* Cassiterite, in granite and chlorite. *Loc.* Ivanhoe Mine (Brilliant N. Lease), Stanhills Tinfields (*ante*). *Ref.* G.S.Q. Pub. 211, p. 7 (1907).

2692. Galena. *Loc.* Bell's Lode, Lawn Hills, Mended Hills, 92 miles S.W. of Burketown. *Co.* Gregory; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 138, p. 3 (1900), and 232, p. 41 (1911).

2693. ——. Coghlan's Silver-Lead Lode, Lawn Hills (*ante*). *Ref.* G.S.Q. Pubs. 138, p. 3 (1900), and 232, p. 42 (1911).

2694. ——. East Star Silver-Lead Lode, Lawn Hills (*ante*). *Assays:* Silver = 8 to 13 oz. per ton; Lead = 52 to 78 per cent. *Ref.* G.S.Q. Pubs. 138, p. 3 (1900), and 232, p. 48 (1911).

2695. ——. In lode, Kaut's Silver King Silver Lead Mine, Lawn Hills (*ante*). *Yield of Ore:* Silver, 27 to 37 oz. per ton; Lead, 50 to 72 per cent. *Ref.* G.S.Q. Pubs. 138, p. 2 (1900), and 232, pp. 45-47 (1911).

2696. ——. *Assoc.with* Cerussite, in lode. *Loc.* Lilydale Silver-Lead Mine, Lawn Hills (*ante*). *Carbonate Ore:* Silver = 7 oz. per ton; Lead = 70 per cent. *Ref.* G.S.Q. Pubs. 138, p. 2 (1900), and 232, p. 44 (1911).

2697. ——. *Assoc.with* Cerussite and Zinc-Blende, in lode. *Loc.* Mended Hill Silver-Lead Mine, Lawn Hills (*ante*). *Yield of Ore:* Silver = 29 to 34 oz. per ton; Lead = 69 to 76 per cent. *Ref.* G.S.Q. Pubs. 138, p. 2 (1900), and 232, p. 45 (1911).

2697A.——. *Assoc.with* Gold, in quartz. *Loc.* Jumbo Reef, Carron, 15 to 16 miles N.N.E. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q Pub. 118, p. 44 (1896).

2697B.——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Sarnia Gem Reef, Carron (*ante*). *Ref.* G.S.Q. Pub. 118, p. 44 (1896), and G.S.M.

2698. ——. *Assoc.with* Gold, Iron Pyrites, Fluorspar, Calcite, and Argentine, in quartz in altered syenitic granite. *Loc.* Plant's Shaft, Golden Gate Gold Mines, Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn., 98 miles (by rail and road) S.E. of Normanton, Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 202, p. 26 (1905).

2699. ——. "The gold indicator" is found in extremely small quantities with the gold in the Golden Gate Reef (*ante*). *Ref.* B.D.

2700. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Galena, in granite. Golden Gate Reef (*ante*). *Ref.*G.S.Q. Pub. 202, p. 10 (1905).

2701. ——. *Assoc.with* Gold, Iron Pyrites, Zinc-Blende, and Calcite. *Loc.* Golden Gate Reef (*ante*). *Ref.* G.S.Q. Pub. 202, p. 15 (1905).

2702. ——*Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Iguana Reef, 30 chains N.W. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q Pub. 118, p. 18 (1896).

2703. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and impure Graphite, in quartz. *Loc.* King of Croydon Reef, between Flanagan's and Croydon, 6 miles S.E. byE. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 35, p. 7 (1887).

2704. ——. *Assoc.with* Gold, Pyrites, and Zinc-Blende, in quartz. *Loc.* La Reine D'Or Lease 554, Queen of Croydon Reef, 1 mile N. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 118, p. 16 (1896).

2705. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Lady Isabell (2 and 3), True Blue Reef, 1¾ mile N.W.byN. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 118 (1896).

2706. ——. *Assoc.with* Gold, Iron Pyrites, Redruthite, Cerussite, and Chalcotrichite, in quartz. *Loc.* Mountain Maid Reef, 2¾ miles N.N.E. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (187).

2707. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Ophir Block, Iguana Reef, 30 chains N.W. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 118, p. 19 (1896).

2708. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* St. Patrick Reef, 35 chains N.N.E. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

2709. ——. *Assoc.with* Gold, Silver, and Iron Pyrites, in quartz. *Loc.* Waratah Lease (570), Croydon Queen Reef, 1½ mile E.byS. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 118, p. 17 (1896), and G.S.M.

2709A.——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in quartz. *Loc.* C.D. Roe Reef, Flanagan's, 12 miles E.byS. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 118, p. 47 (1896).

2710. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Duchess Reef, Flanagan's (*ante*). *Ref.* G.S.Q. Pub. 35, p. 11 (1887).

2710A.——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Australian Beauty Reef, Golden Valley, 12 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, pp. 40, 41 (1896), and G.S.M.

2710A1. ——. *Assoc.with* Gold, Iron Pyrites, and Ironstone, in quartz. *Loc.* King of Wallabadah Lease (410), Golden Valley (*ante*). *Ref.* G.S.Q. Pub. 118, p. 42 (1896).

2710B. ——. *Assoc.with* Gold, Iron Pyrites, and Pyromorphite, in quartz. *Loc.* Billy Brown Reef, Mark Twain Centre, 5 miles E.N.E. of Croydon Rail. Stn., Croydon Goldfield. *Ref.* G.S.Q. Pub. 118, p. 46 (1896).

2710C. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. Mark Twain Reef, Mark Twain Centre (*ante*). *Ref.* G.S.Q. Pub. 118, p. 45 (1896).

2710D. ——. *Assoc.with* Gold, Anglesite, Massicot, and Ironstone, in quartz. Ace of Hearts Reef, Tabletop, 9 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 35 (1896).

2711. ——. *Assoc.with* Gold, Iron Pyrites, Pyromorphite, Massicot, and Cerussite Tabletop Reef, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 34 (1896).

2711A.——. *Assoc.with* Gold and Iron Pyrites, in quartz; Serpentine, and Graphite. *Loc.* Gem and Oriental Reef, Lower Twelve Mile, 2½ miles W. of Twelve Mile, 8 miles N. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 32 (1896).

2711B.——. *Assoc.with* Gold and Cerussite, in quartz. *Loc.* Jenny Lind Reef, Lower Twelve Mile (*ante*). *Ref.* G.S.Q. Pub. 118, p. 34 (1896).

2711C.——. *Assoc.with* Gold, in quartz. *Loc.* Jubilee and President Reefs, Twelve Mile, 6 miles N. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, pp. 31, 32 (1896).

2712. ——. In quartz, irregularly disseminated in the reefs of the "Felsite" country. *Loc.* Croydon Goldfield, 94 miles (by rail) S.E. of Normanton. *Co.* Surrey; *Dist.* Burke. *Ref.* B.D.

2712A.——. *Assoc.with* Gold, Cerussite, and Massicot, in lode. *Loc.* Boulder Hill, Broken Hill, and Granite Castle Silver-Lead Lodes, Flinders R., Por. 2, Par. of Cracknell, Mt. Emu Plains Stn., 62 miles N.N.E. of Hughenden, 55 miles N.W.byW. of Pentland Rail. Stn. (Gt. Northern line). *Co.* Wongalee; *Dist.* Burke. *Ref.* (and *Assays*) Q.G.M.J., vol. 11, p. 136 (1910), and G.S.Q. Pub. 235, pp. 23-33 (1911).

2713. ——. *Assoc.with* Gold, in quartz. *Loc.* Soap Spar Gold Mine, Woolgar Goldfield, 97 miles N. of Richmond Rail. Stn., 404 miles (by rail and road), W.byS. of Townsville. *Co.* Woolgar; *Dist.* Burke. *Ref.* G.S.Q. Pub. 125, p. 39 (1898).

2714. ——. *Assoc.with* Gold, Silver, and Copper, in lodes. *Loc.* Woolgar Goldfield (*ante*). *Ref.* A.R.D.M., p. 42 (1886).

2715. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, and Zinc-Blende, in lode. *Loc.* Allendale Silver Mine, Chowey Cr., 6 miles N.W. of Chowey Rail. Stn. (Gayndah line), 68 miles (by rail and road) W. of Maryborough. *Co.* Bowen; *Dist.* **Burnett.** *Assay: See* No. 3567. *Ref.* G.S.Q. Pub. 125, p. 35 (1897), and P.R.S.Q., vol. 4, p. 39 (1887).

2716. ——. In lode. N. of Allendale Silver Mine, Chowey Cr. (*ante*). *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

2717. ——. Hannah's Lode, Chowey Cr. (*ante*). *Assay:* Gold = trace, Silver = 30 oz. per ton, Lead = 50 per cent. *Ref.* P.R.S.Q., vol. 4, p. 47 (1887).

2718. ——. Gilbert Rock, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.M.

2719. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Stibnite. *Loc.* Lady Norman and Reid Cr. Mines, 4½ miles S.W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Contents:* Gold = 2·25 and 5·05 oz. per ton. *Ref.* A.R.D.M., 1894, p. 34.

2720. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Zinc-Blende, and Barytes, in quartz. *Loc.* Potosi Copper Lode, 3 miles W. of Mungai, 6 miles W. of Mt. Perry Rail. Stn., 73 miles (by rail and road) S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

2721. ——. In lodes, nr. Potosi Lode, 6 miles W. of Mt. Perry Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

2721A.——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz. *Loc.* California Reef, Reid's Cr. Goldfield, 4½ miles S.W. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 21, p. 11 (1885), and G.S.M.

2722. Galena. *Assoc.with* Gold, Mispickel, Iron Pyrites, Zinc-Blende, and Stibnite, in quartz and felspar. *Loc.* Reid Cr. Reefs, on Branch Cr., Reid's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885), and A.R.D.M., p. 34 (1894).

2723. ——. Rocky Cr., 7 miles W of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.M.

2724. ——. *Assoc.with* Iron Pyrites and Zinc-Blende, with traces of Gold and Silver. *Loc.* Gt. Southern Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* O.R.

2725. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Paradise P.C., Paradise Goldfield, 8 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 68, p. 1 (1891).

2726. ——. *Assoc.with* Redruthite and Limonite, in lode. *Loc.* Girl-I-left-Behind-Me Mine, Stoney Cr., Degilbo Run, Stanton-Harcourt Diggings, 11 miles N. of Degilbo Rail. Stn. (Gayndah line), 69 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Assay:* Silver = 8 oz. per ton. *Ref.* G.S.Q. Pub. 168, p. 3 (1901).

2727. ——. *Assoc.with* Gold, Silver, Iron Pyrites, and Zinc-Blende, in quartz and calcite. *Loc.* Stanton Harcourt Diggings (*ante*). *Ref.* G.S.Q. Pub. 25, p. 4 (1886).

2728. ——. *Assoc.with* Iron Pyrites. *Loc.* M.L. (26), Gympie Copper Mines, Ltd., Gooroomjam Cr., 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* (and *Assays*) G.S.Q. Pub. 169, p. 7 (1901).

2729. ——. *Assoc.with* Copper Pyrites, Tenorite, Iron Pyrites, and Mispickel, in quartz and calcite. *Loc.* P.A. (2), Gympie Copper Mines, Ltd., Gooroomjan Cr. (*ante*). *Assays: See* No. 2139. *Ref.* G.S.Q. Pub. 169, p. 10 (1901).

2730. ——. *Assoc.with* Marcasite, Iron Pyrites, Copper Pyrites, and Azurite, in quartz. *Loc.* Black Watch Reef, Scrub Paddock Diggings, 13 miles N.N.E. of Nanango, *Co.* Fitzroy; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 29, p. 3 (1886).

2730A.——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Zinc-Blende, and Calcite, in ironstone lode. *Loc.* Ban Ban Stn., 12 miles S.E.byE. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* Burnett. *Ref.* A.R., p. 179 (1909).

2730B.——. *Assoc.with* Cerussite, Anglesite, Massicot, Malachite, Azurite, and Limonite, in lode. *Loc.* About 5 miles S. of Coalstoun Lakes, 16 miles S.W. of Biggenden Rail. Stn. (Gayndah line). *Co.* Mackenzie (*ante*). *Ref.* A.R., pp. 287, 288, 291 (1910).

2731. ——. Cattle Cr., Rawbelle, 95 miles W.byS. of Bundaberg. *Co.* Rawbelle; *Dist.* Burnett. *Ref.* G.S.M.

2732. ——. Containing Silver *in assoc.with* Massicot. *Loc.* St. John's Cr. Goldfield, Burnett R., 16 miles S.W. of Eidsvold Goldfield. *Co.* Wicklow; *Dist.* Burnett. *Ref.* G.S.M.

2733. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* All Nations Reef, Eidsvold Goldfield, 37 miles W.S.W. of Mt. Perry, 80 miles W.S.W. of Bundaberg. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 43, p. 4 (1887).

2734. ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel, in quartz. *Loc.* Cosmopolitan Lease (42), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 102, p. 3 (1895).

2735. ——. *Assoc.with* Gold, Iron Pyrites, and Ironstone. *Loc.* Mt. Rose United Mine, Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, p. 2 (1887).

2736. ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* E. of Burnett R., Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, p. 5 (1887).

2737. ——. *Assoc.with* Silver and Anglesite. *Loc.* Yarrol Stn., Dawes Range, 25 miles N.W. of Mt. Perry Rail. Stn., 92 miles (by rail and road) W. of Bundaberg. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.M.

2738. ——. *Assoc.with* Anglesite and Cerussite, in red gossan. *Loc.* Spring Cr., br. of Blackfellow's Cr., trib. of Lynd R., 12 miles W. of Fossilbrook, 45 miles S.W. of Almaden Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* Cook. *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2739. ——. Cannibal Cr., 15 miles S.E. of Maytown, Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Assay:* Silver = 60 oz. per ton. *Ref.* P.R.S.Q., vol. 4, p. 46 (1887).

2740. ——. *Assoc.with* Massicot and Mispickel, in quartz. *Loc.* Ebagoola, Hamilton Goldfield, 33 miles W. of Port Stewart, 173 miles N.W.byW. of Cooktown. *Co.* Coen; *Dist.* Cook. *Ref.* O.R.

2741. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Goldmount Reef, 6 miles S.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 163, pp. 8, 9 (1901), and 209, p. 15 (1907).

2741A.——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Johannesburg (Lord Roberts) Reef, 3½ miles S.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 7 (1901).

2741B.——. *Assoc.with* Mispickel, in quartz. *Loc.* Rothwell Reef, 5 miles from Coen, 50 miles (by road) N.N.W. of Port Stewart. *Co.* Coen; *Dist.* Cook. *Ref.* O.R.

2742. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Victory Reef, McLeodsville, 6 miles N.N.W. of Thornborough, 25 miles (by coach) N. of Dimbullah Rail. Stn. (Chillagoe line), Hodgkinson Goldfield. *Co.* Dagmar; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 27 (1884).

2743. ——. *Assoc.with* Copper carbonates. *Loc.* Einasleigh R., 10 miles from Einasleigh Rail. Stn., 110 miles (by rail and road) S.S.W. of Almaden Rail. Stn. (Etheridge line). *Co.* Gilbert; *Dist.* Cook. *Ref.* O.R.

2744. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Aurora Reef, Aurora Cr., 8 miles S.W. of Georgetown, **Etheridge Goldfield.** *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 35, p. 5 (1887).

2745. ——. *Assoc.with* Gold and Iron Pyrites, in ironstained quartz. *Loc.* Redan Reef, Aurora Cr. (*ante*). *Ref.* G.S.Q. Pub. 151, p. 10 (1900).

2745A.——. *Assoc.with* Cerussite and Anglesite, in lode. *Loc.* P.A., between Aurora Cr. and Rocky, about 8 miles S.W. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* A.R. 242 (1910).

2746. ——. *Assoc.with* Gold, Copper Pyrites, Iron Pyrites, and Mispickel, in quartz and calcite. *Loc.* Balmoral Reef, Castleton, 5 miles S.S.E. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), and 151, p. 12 (1900).

2747. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Big Reef (*ante*). *Ref.* G.S.Q. Pub. 151, p. 12 (1900).

2748. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz and calcite. *Loc.* Sir Henry Havelock Reef, 2½ miles N.W. of Castleton, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 151, p. 12 (1900).

2748A.——. *Assoc.with* Silver, Copper Pyrites, Cerussite, and Limonite, in lode. *Loc.* Mt. De Vall Claim, Charleston, 144 miles (by rail) S.W. of Almaden Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* A.R., p. 212 (1910).

2749. ——. *Assoc.with* Gold, Copper Pyrites, Iron Pyrites, Redruthite, Mispickel, and Zinc-Blende, in quartz. *Loc.* Nil Desperandum Mine, Charleston (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), 151, p. 11 (1900), and 219, p. 14 (1909).

2750. ——. *Assoc.with* Gold, Iron Pyrites, Pyrrhotite, and Zinc Blende, in quartz. *Loc.* Queenslander Mine, Charleston (*ante*). *Ref.* O.R. and G.S.Q. Pub. 219, p. 13 (1909).

2751. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Cumberland Reef, Cumberland, 12 miles W.byS. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 5 (1887).

2751A.——. *Assoc.with* Silver, Anglesite, Cerussite, and Malachite, in quartz lode. *Loc.* Wright's Leader, Donnyville, 4½ miles S. of Georgetown, Etheridge Goldfield (*ante*). *Assay:* *Ref.* A.R., p. 228 (1910).

2751B.——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Durham Consols Mine, Durham, 4 miles W. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* A.R., p. 323 (1911).

2752. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Durham Reef, Durham (*ante*). *Ref.* G.S.Q. Pub. 35, p. 4 (1884), and 219, p. 11 (1909).

2753. ——. Light of Asia Mine, Durham (*ante*). *Ref.* G.S.M.

2753A.——. *Assoc.with* Gold, Massicot, Cerussite, and Malachite, in quartz and schist. *Loc.* Ancient Briton Claim, Georgetown, 20 miles N. of Charleston Rail. Stn., 160 miles (by rail and road) S.W. of Almaden Rail. Stn., Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* A.R., p. 215 (1910).

2754. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Lady Maria Reef, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 7 (1900).

2755. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Mispickel, and Zinc-Blende, in quartz. *Loc.* Papa Reef, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 35, p. 3 (1887).

2756. ——. *Assoc.with* Gold, Iron Pyrites, and Tenorite, in quartz. *Loc.* Young Wexford Mine, Wexford Reef, 3 miles N. of Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 10 (1900), and G.S.M.

2756A.——. In lodes in slate. Mosquito Cr. Silver-Lead Lodes, about 10 miles S.W.byS. of Charleston, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* A.R.D.M., 1907, p. 57, and G.S.Q. Pub. 219, pp. 14-17 (1909).

2756B. Galena. *Assoc.with* Silver, Massicot, Limonite, in puartz. *Loc.* M.L. (64), Mosquito Cr. Silver-Lead Lodes (*ante*). *Assays:* Silver = 41 oz. and 12 oz. per ton; Lead = 75 and 32 per cent.; Gold = 1 dwt. 14 gr. per ton. *Ref.* A.R., p. 268 (1910).

2757. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc-Blende, in quartz. *Loc.* International Reef, Rocky, Sandy Cr., 7 miles S.W.byS. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 151, p. 10 (1900), and 219, p. 9 (1909).

2757A. ——. *Assoc.with* Gold, Silver, Massicot, Anglesite, and Cerussite, in lode. *Loc.* 1 mile N. of International Mine, Rocky, Sandy Cr. (*ante*). *Assays:* Gold = 4 dwt. 14 gr. and 1 oz. 9 dwt., and Silver = 13 oz. 17 dwt. and 7 oz. 7 dwt. per ton; Lead = 65·8 and 47·7 per cent. *Ref.* A.R., p. 228 (1910).

2758. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Stonewall Jackson Reef, Rocky, Sandy Cr. (*ante*). *Ref.* G.S.Q. Pub. 151, p. 10 (1900).

2759. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Butcher Bird, Deceitful Susan, Merry Monarch, and Stockman Reefs, between Talbot and Machine Crs., 10 miles S.E.byS. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 151, p. 11 (1889).

2759A. ——. *Assoc.with* Silver, in quartz. *Loc.* Stockman Mine, between Talbot and Machine Creeks (*ante*). *Ref.* A.R., p. 254 (1910).

2759B. ——. *Assoc.with* Copper Ore. *Loc.* Dorothy Copper Mine, Macmillan Creek, about 24 miles E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 234, p. 28 (1911).

2759C. ——. *Assoc.with* Copper Pyrites and Iron Pyrites, in granite. *Loc.* Stockman's Cr., 6 miles N.W. of Teesdale Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 234, p. 27 (1911).

See further Etheridge references under 2814A.

2760. ——. *Assoc.with* Gold, in quartz. *Loc.* Hit or Miss Mine, nr. Kingsborough, Hodgkinson Goldfield, 23 miles (by road) N. of Dimbulla Rail. Stn. (Chillagoe line), **Walsh and Tinaroo Mineral Fields.** *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 47 (1887).

2761. ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel, in quartz. *Loc.* Just-in-Time Reef, Northcote, 15 miles W. of Mareeba Rail. Stn., Cairns line, 61 miles (by rail and road) W. of Cairns, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 28 (1884).

2762. ——. *Assoc.with* Gold and Copper Pyrites, in quartz. *Loc.* Monarch Reef, Northcote (*ante*). *Ref.* G.S.Q. Pub. 16, p. 28 (1884).

2763. ——. *Assoc.with* Gold, Copper carbonate, and Calcite, in quartz. *Loc.* Black Ball Lease, 2½ miles N. of Thornborough, 21 miles (by coach) N. of Dimbullah Rail. Stn. (Chillagoe line), 92 miles (by rail and road) W. of Cairns. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 47 (1887).

2764. ——. *Assoc.with* Gold, in quartz. *Loc.* Pioneer Reef, ½-mile N. of Thornborough, 19 miles (by coach) N. of Dimbullah Rail. Stn., Chillagoe line, Hodgkinson Goldfield (*ante*).

2765. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, Zinc-Blende, in quartz. *Loc.* Union Reef, Woodville, 13 miles N.W. of Thornborough, Lower Hodgkinson R., Hodgkinson Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 47 (1887), and G.S.Q. Pub. 16, p. 24 (1884).

2766. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Freethinker Tin Claim, Irvinebank, 12 miles W.S.W. of Herberton, 10 miles S.W. of Stannary Hills Rail. Stn., Chillagoe Br. line, Walsh and Tinaroo Mineral Field. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 59 (1890).

2767. ——. *Assoc.with* Anglesite. *Loc.* Agnostic Cutting, Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Yield:* Silver = 100 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 32 (1894).

2768. ——. *Assoc.with* Silver and Anglesite. *Loc.* Lady Jane Silver Mine, Montalbion (*ante*). *Yield:* Silver = 408 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

2769. ——. *Assoc.with* Copper Pyrites and Galena, in pipe veins. *Loc.* Montalbion Silver Mine, Montalbion (*ante*). *Ref.* G.S.Q. Pub. 119, p. 29 (1897).

2770. ——. *Assoc.with* Silver and Anglesite. *Loc.* North Queensland Silver Mg. Co., Montalbion (*ante*). *Yield:* Silver = 90 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 31 (1897).

2771. ——. *Assoc.with* Silver. *Loc.* Star Mine, Montalbion (*ante*). *Estimated Yield:* Silver = 46 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

2772. ——. *Assoc.with* Cerargyrite. *Loc.* Montalbion (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

2773. ——. *Assoc.with* Anglesite. Mountain Maid Mine, 5 miles S. of Montalbion, 12 miles S.S.W. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Average Yield:* Silver = 100 oz. per ton. *Ref.* G.S.Q. Pub. 119, p. 32 (1897).

2773A. ——. Orient Camp, Cumming's Cr., 4 miles S.S.W. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields (*ante*).

2774. ——. *Assoc.with* Anglesite and Zinc-Blende. *Loc.* Barossa Silver Lease, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 119, p. 32 (1897).

2775. ——. *Assoc.with* Silver, Argentite, and Stibnite. *Loc.* Cumnor Silver Lease, Silverfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 46 (1887).

2776. ——. *Assoc.with* Anglesite. *Loc.* Cuze's Lease, Silverfield (*ante*). *Ref.* G.S.M.

2777. ——. *Assoc.with* Anglesite. *Loc.* Mystery Lease, Silverfield (*ante*). *Ref.* G.S.M.

2778. ——. Prentice Bros'. Mine, Silverfield (*ante*). *Ref.* G.S.M.

2779. ——. *Assoc.with* Anglesite. *Loc.* Silver Hill Lease, Silverfield (*ante*). *Ref.* G.S.M.

2780. ——. *Assoc.with* Silver, Cppper Pyrites, Iron Pyrites, Mispickel, and Zinc-Blende. *Loc.* Tornado Silver Mine, Silverfield (*ante*). *Analysis:* Zinc = 13·42, Copper = 5·10, Lead = 6·06, Arsenic = 11·99, Iron = 29·06, Sulphur = 32·74, Silica = 2·11 per cent. *Ref.* P.R.S.Q., vol. 4, p. 48 (1887).

2781. ——. *Assoc.with* Stibnite. *Loc.* Victoria Silver Mine, Silverfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 45 (1887).

2782. ——. *Assoc.with* Zinc-Blende and Iron Pyrites, in lode. *Loc.* Victoria Amalgamated Silver Mine, Silverfield (*ante*). *Ref.* G.S.Q. Pub. 119, p. 32 (1897).

2783. ——. *Assoc.with* Cassiterite and Iron Pyrites. *Loc.* Great Wheel Busy Mine, Watsonville, head of James Cr., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 46 (1897).

2783A. ——. *Assoc.with* Cassiterite, Copper Pyrites, Mispickel, Wolfram, Garnet, and Chlorite, in greywacke. *Loc.* King of the Ranges Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 222, pp. 41-50 (1910).

2784. ——. *Assoc.with* Cassiterite and Iron Pyrites, in diorite dyke in porphyry. *Loc.* Mountaineer Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 28 (1883).

2785. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz. *Loc.* Bamford, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay:* Gold = 19 gr.; Silver = 18 oz. 1 dwt. per ton; Lead = 4·6; Copper = 5·3 per cent. *Ref.* A.R., p. 46 (1906).

2786. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Molybdenite, and Zinc-Blende. *Loc.* Bamford (*ante*). *Assay: See* No. 2167. *Ref.* A.R., p. 101 (1907).

2787. ——. *Assoc.with* Copper Pyrites, Mispickel, and Zinc-Blende. *Loc.* Boomerang Mine, 1 mile W. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

2788. ——. *Assoc.with* Gold, Iron Pyrites, and Hornblende, in quartz. *Loc.* Luxton's Mine, E. of Mt. Luxton, Wet Cr., br. of California Cr., 3 miles N.E. of Ord Rail. Stn., Mt. Garnet-Chillagoe line, Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Gold = 150 oz. 16 dwt. per ton. *Ref.* G.S.Q. Pub. 119, p. 42 (1897).

2789. ——. *Assoc.with* Anglesite, Iron Pyrites, and Limonite, in quartz reef. *Loc.* nr. Mt. Luxton, Wet Cr., br. of California Cr. (*ante*). *Assay:* Silver = 39 oz. per ton. *Ref.* G.S.Q. Pub. 119, p. 42 (1897).

2790. ——. *Assoc.with* Copper Pyrites. *Loc.* Fortunatus Mine, Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 50 (1897).

2790A. ——. *Assoc.with* Massicot and Cerussite, in lode. *Loc.* Dolly Brand Mine, 1 mile from Chillagoe, Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Lead = 45 per cent.; Silver, 104 oz. 18 dwt. per ton; Gold = trace. *Ref.* A.R., p. 318 (1911).

2791. ——. *Assoc.with* Anglesite, Massicot, Cerussite, Manganese-dioxide, and Actinolite. *Loc.* Macrossan Mine, between Cathedral Range and Arbinjoe Cr., 2 miles E. of Chillagoe, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay: See* No. 28. *Ref.* G.S.Q. Pub. 67, p. 7 (1890).

2792. ——. *Assoc.with* Silver. *Loc.* Torpy's Silver-Lead Mine, Crooked Cr., br. of Walsh R., nr. Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* (1) Silver = 22 oz. per ton; Lead = 20·4; Zinc = 30·8 per cent. (2) Silver = 53 oz. per ton; Lead = 54·2 per cent. *Ref.* A.R., p. 123 (1907).

2793. Galena. *Assoc.with* Minium and Anglesite, in ferruginous gossan. *Loc.* Chillagoe Queen Mine, Dargalong, 7 miles S. of Mungana Rail. Stn., Chillagoe line, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 10 (1891), and G.S.M.

2794. ——. *Assoc.with* Anglesite, Massicot, and Cerussite, in talcose gossan. *Loc.* Ewan and Delaney's P.A., Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

2795. ——. *Assoc.with* Minium, Anglesite, Massicot, Cerussite, and Copper carbonate. *Loc.* Pandora Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

2796. ——. *Assoc.with* Minium and Cerussite, in ferruginous clay. *Loc.* P.A. (40 acres), Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

2797. ——. *Assoc.with* Copper Pyrites, Cassiterite, Iron Pyrites, Mispickel. *Loc.* Iolanthe Tin Mine, Koorboora, 108 miles (by rail) S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 11 (1891).

2798. ——. *Assoc.with* Cassiterite, Copper Pyrites, Iron Pyrites, Mispickel, and Mica, in lode. *Loc.* Shakespeare Tin Lease, Koorboora (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

2799. ——. *Assoc.with* Silver and Cassiterite. *Loc.* Tennyson Tin and Silver Mine, Koorboora (*ante*). *Approx. contents:* Lead = 45; Tin = 22 per cent.; Silver = 80 oz. per ton.

2800. ——. *Assoc.with* Wolfram and Cassiterite, with traces of Chrysocolla and Magnetite, in chlorite, muscovite, and fluorspar. *Loc.* Koorboora (*ante*). *Ref.* B.D.

2801. ——. *Loc.* Comstock Mine, Lappa, 102 miles (by rail) S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

2802. ——. *Assoc.with* Cerussite. *Loc.* Lappa (*ante*). *Ref.* G.S.M.

2803. ——. *Assoc.with* Cerussite, Malachite, Tetrahedrite, and Zinc-Blende, in siliceous lode. *Loc.* Eclipse Mine, **Muldiva**, 6 miles S.W.byS. of Almaden Rail. Stn., (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

2804. ——. *Assoc.with* Anglesite and Copper carbonate, in lode material. *Loc.* New Moon Mine, Muldiva (*ante*). *Assay:* Silver = 269 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

2805. ——. *Assoc.with* Cuprite, Cerussite, Malachite, and Ironstone, in clay and quartz. *Loc.* Girofla Mine, Opera Cr., **Mungana**, 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 3 (1891), and B.D.

2806. ——. *Assoc.with* Silver. *Loc.* Lady Jane Mine, Mungana (*ante*). *Assay:* Silver = 31 oz. per ton; Lead = 62·2 per cent. *Ref.* A.R., p. 123 (1907).

2807. ——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, Malachite, Minium, Cerussite, Hematite, Zinc-Blende, and Garnet, in gossan. *Loc.* Penzance Mine, Redcap Cr., Mt. Redcap, 3 miles N.E. of Mungana Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 69, p. 6 (1891), and 134, p. 11 (1898).

2808. ——. *Assoc.with* Silver and Copper Ore. *Loc.* Penzance Mine, Redcap Cr., Mt. Redcap (*ante*). *Ref.* G.S.Q. Pub. 125, p. 5 (1897).

2809. ——. *Assoc.with* Minium and Cerussite, in limestone. *Loc.* Queenslander Mine, Redcap Cr., Mt. Redcap (*ante*). *Assays:* Silver = 30 oz. to 200 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 7 (1891), and G.S.M.

2809A. ——. Gilliam Wolfram Mine, Wolfram Camp. *Co.* Hodgkinson (*ante*). *Ref.* B.D. *See* further Walsh and Tinaroo references, Nos. 2844-2864.

2810. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Towalla King Mine, Cooliman Cr., Russell R. Extd. (Towalla) Goldfield, 30 miles (by rail) W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 97, p. 4 (1894).

2811. ——. *Assoc.with* Massicot, Cerussite, Iron Pyrites, Mispickel, and Zinc-Blende, in lode. *Loc.* Chillagoe Mine, off Wise's Knob, Oaks Goldfield, 30 miles (by road) S.byE. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy; *Dist.* Cook. *Ref.* A.R., p. 187 (1909).

2812. ——. *Assoc.with* Gold and Cerussite, in quartz leader. *Loc.* Avis's Lease, Oaks Gold and Mineral Field (*ante*). *Ref.* A.R., p. 156 (1908).

2812A. ——. *Assoc.with* Gold, in quartz. *Loc.* Goolha Goolha Reef, The Springs, 9 miles (by road) S.E. of Coen. *Co.* Sidmouth; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 22 (1901).

2813. ——. *Assoc.with* Gold and Iron Pyrites, in quartz veins in granite. *Loc.* Possession Is., Torres Strait, 12 miles S.E. of Thursday Is. *Co.* Somerset; *Dist.* Cook. *Assay:* Gold = 1 oz. 17 dwt. 5 gr. per ton; Silver = 1 oz. 1 dwt. 19 gr. per ton. *Ref.* G.S.Q. Pub. 180, p. 22 (1902).

2814. ——. *Assoc.with* Zinc-Blende, in quartz. *Loc.* Fossilbrook, 28 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Fields. *Co.* Tate; *Dist.* Cook. *Ref.* O.R.

2814A.——. *Assoc.with* Copper Ore and Iron Pyrites, in porphyry. *Loc.* Mt. Jardine, 12 miles N. of Einasleigh Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Tate (*ante*). *Ref.* G.S.Q. Pub. 234, p. 28 (1911).

2815. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Brilliant Mine, Brilliant and Parallel Reefs, Horn Is. Goldfield, 3 miles S.E. of Thursday Is., Torres Strait. *Co.* Torres; *Dist.* Cook. *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

2816. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Cornucopia Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 5 (1896)

2817. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Dead Cat Mine, Good Luck Reef, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 3 (1896).

2818. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc-Blende, in quartz. *Loc.* Eclipse Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112 (1896), and G.S.M.

2819. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Italian Mine, Good Luck and Italian Reefs, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

2820. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Mystery P.C., Mystery or Dead Cat Reef, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 2 (1896).

2821. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc-Blende, in quartz. *Loc.* Pioneer Claim, Pioneer Reef No. 1, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

2822. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Rosetta Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

2823. ——. *Assoc.with* Gold and Iron Pyrites. *Loc.* Smith's Reef, Horn Is. Goldfield (*ante*). *Ref.* G.S.M.

2824. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in quartz. *Loc.* Triumph Mine, 2 and 3 Reefs, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

2825. ——. Chandi Chank, Gilberton, 24 miles S.byE. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* G.S.M.

2826. ——. Two miles W. of 6-Mile Cr., Gilberton (*ante*). *Ref.* G.S.M.

2827. ——. Gilberton (*ante*). *Assay:* Silver = 155 oz. per ton. *Ref.* P.R.S.Q., vol. 4, p. 46 (1887).

2827A.——. Madras Silver-Lead Mine, 1 mile N.E. of Ashtonville, 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Wrotham; *Dist.* Cook.

2828. ——. *Assoc.with* Iron Pyrites, Mispickel, and Zinc-Blende. *Loc.* Ballandean Mines, 14 miles (by rail) S. of Stanthorpe (Main line). *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 125, pp. 29, 30 (1897).

2829. ——. *Assoc.with* Mispickel, Copper Pyrites, and Zinc-Blende, in chloritic rock. *Loc.* Doctor's Lode, Sel. (39), Jibbinbar, 20½ miles S.byW. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 67, p. 2 (1890).

2829A.——. *Assoc.with* Silver, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz reef. *Loc.* Jibbinbar Silver Mine, Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 125, pp. 29, 30 (1897).

2830. ——. *Assoc.with* Gold, Mispickel, and Minium, in quartz. *Loc.* Min. Area (25), Jibbinbar (*ante*). *Assays:* Silver, 16 oz. and 48 oz., and Gold = 3 dwt. per ton. *Ref.* G.S.Q. Pub. 87, p. 10 (1892).

2831. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Sels. 34, 35, Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

2832. ——. *Assoc.with* Gold and Mispickel, in quartz and calcite. *Loc.* Kaffir Chief Mine, Pikedale Goldfield, 20 miles N.W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* (*Yields, Assays*) G.S.Q. Pub. 20, p. 74 (1898).

2833. ——. *Assoc.with* Copper Pyrites, Redruthite, Copper carbonate, Ironstone, Manganese-dioxide, and Zinc-Blende, in lode. *Loc.* Pikedale Silver Mine, Woolshed Gully, Pikedale Head Stn., 20 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 87 (1892).

2834. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, and Zinc-Blende, in lode. *Loc.* Silver Queen Silver-Lead Mine, right bank of Severn R., 6 miles W. of Ballandean Rail. Stn. (Mail line), 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assays:* (1) Gold = 16 gr., Silver = 17 oz. 12 dwt. per ton; Copper = 1·26, Lead = 7·0, Zinc = 8·8 per cent.; (2) Lead = 40, Copper = 6 per cent., Silver = 64 oz. per ton. *Ref.* G.S.Q. Pub. 191, pp. 24, 39 (1904), and A.R., p. 210 (1910).

2835. Galena. *Assoc.with* Copper Pyrites, Zinc-Blende, and Cassiterite, in chlorite, quartz, and fluorspar lodes. *Loc.* Severn R., 7 miles W. of Ballandean Rail. Stn., 21 miles S.S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

2836. ——. *Assoc.with* Silver, Anglesite, and Massicot. *Loc.* Silvery Wave Mine, Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 125, p. 30 (1897).

2837. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz and chlorite. *Loc.* Mrs. Allison's Sugarloaf, 7 miles E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 120, p. 87 (1898).

2837A. ——. *Assoc.with* Silver and Cerussite. *Loc.* Macdonald Goldfield, 31 miles W.byS. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs.

2838. ——. *Assoc.with* Copper Pyrites. *Loc.* Silver Crown Mine, 4 miles E. of **Silver Spur,** 40 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* G.S.Q. Pub. 191, p. 37 (1904).

2839. ——. *Assoc.with* Anglesite, Cerussite, Redruthite, and Copper carbonate, in gossan. *Loc.* Silver King Mine, 3 miles N. of Silver Spur, 43 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* G.S.Q. Pub. 120, p. 94 (1898).

2840. ——. *Assoc.with* Gold, Pyrargyrite, Iron Pyrites, Copper Pyrites, Cuprite, Tile Ore, Malachite, Azurite, Cerussite, Zinc-Blende, Smithsonite, Ironstone, and Calcite. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe (*ante*). *Mean Analysis:* Silica = 14, Iron = 15, Lead = 13, Zinc = 26, Sulphur = 28, Copper = 1¼, Lime Carbonate = 1, Arsenic = nil, Alumina = 5 per cent., Silver = 26 oz. per ton. *Ref.* G.S.Q. Pub. 120 (1898), and p. 191 (1904).

2841. ——. *Assoc.with* Malachite. *Loc.* 3 miles N.W. of Silver Spur, Texas, 46 miles W.S.W. of Stanthorpe (*ante*). *Ref.* A.R. (1907), p. 126.

2841A. ——. *Assoc.with* Silver, Copper Pyrites, and Zinc-Blende, in lode. *Loc.* Claim on Lucky Valley Goldfield, 12 miles S.S.E. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* A.R., p. 223 (1910).

2842. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Ferro-Calcite. *Loc.* Louisa Mine, Talgai Goldfield, 21 miles W.N.W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pubs. 120, pp. 55 (1898); 159, p. 1 (1900); and 186, pp. 17, 18 (1903), and G.S.M.

2843. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Try Again Reef, Thanes Cr. Goldfield, 24 miles W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 120, p 69 (1898).

2844. ——. *Assoc.with* Bismuthinite and Zinc-Blende. *Loc.* Great Britain Mines, Coolgarra, Return Cr., 9 miles N.N.E. of Mt. Garnet Rail. Stn. (Chillagoe Br. line), **Walsh and Tinaroo Mineral Fields.** *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.M.

2845. ——. *Assoc.with* Silver, Anglesite, Minium, and Malachite. *Loc.* Koh-i-noor Mine, Coolgarra (*ante*). *Yield:* Silver = 94 oz. per ton, Lead = 40 per cent. *Assays:* Silver = 300 oz. per ton. *Ref.* G.S.Q. Pubs. 72, p. 4 (1891), and 125, p. 32 (1897), and G.S.M.

2846. ——. *Assoc.with* Minium and Anglesite, in quartz. *Loc.* Tucker's Silver-Lead Lode, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

2847. ——. *Assoc.with* Cassiterite and Iron Pyrites, in quartzose lode. *Loc.* Victoria Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

2848. ——. Evelyn Mine, 4 miles from Coolgarra, 13 miles N.N.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.M.

2849. ——. *Assoc.with* Cerussite, Massicot, and Limonite, in lode. *Loc.* Caledonia Mine, Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

2850. ——. *Assoc.with* Copper carbonate, in gossan. *Loc.* Dunn's Tunnel Mine, Dry R. (*ante*). *Reported Yield:* Silver = 84 to 105 oz. per ton. *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2851. ——. *Assoc.with* Chalcanthite, Anglesite, Minium, Massicot, Linarite, in slate. *Loc.* John Bull Silver-Lead Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

2852. ——. *Assoc.with* Malachite, in gossan. *Loc.* McFadden's or Paddy's Silver Lode, Dry. R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2853. ——. *Assoc.with* Iron Pyrites and Zinc-Blende. *Loc.* P.C., Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2854 ——. In lode in slate. *Loc.* Rainbow Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2855. ——. *Assoc.with* Massicot, Cerussite, Copper carbonate, and Ironstone, in quartz. *Loc.* Silver Streak Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2856. ——. In slate. *Loc.* Silver Valley Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

2857. ——. *Assoc.with* Cerussite, in gossan. *Loc.* Spring Cr., Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2858. ——. *Assoc.with* Minium, Argentite, and Siderite. *Loc.* Target Mine, Dry R. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 46 (1887).

2859. ——. *Assoc.with* Cerussite, in lode. *Loc.* Target 1 E. Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2860. ——. *Assoc.with* Copper Pyrites, Marcasite, and Zinc-Blende, in quartz. *Loc.* Try-no-more Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

2861. ——. *Assoc.with* Massicot and Cerussite, in quartz lode in shale and greywacke. *Loc.* White Star Mine, Dry R., br. of Wild (Upper Herbert) R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

2862. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Louisa Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns-Herberton line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 18 (1883).

2863. ——. *Assoc.with* Tetrahedrite, Malachite, Azurite, Mimetite, Hematite, and Limonite, in lode. *Loc.* Mt. Garnet, Return Cr., 136 miles (by rail) S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

2864. ——. *Assoc.with* Cerussite, Iron Pyrites, Copper Pyrites, Zinc-Blende, etc., in slate and volcanic tuff. *Loc.* Lancelot Mine, Newelton (Silver Valley), 9 miles S.W. of Herberton, 10 miles S.E.byS. of Stannary Hills Rail. Stn., br. of Chillagoe line, Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Lead = 78 per cent.; Silver = 200 oz. per ton. *Ref.* P.R.S.Q., vol. 4, p. 46 (1887), and L.B. 1, p. 479 (1883).

2865. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Band of Hope Lease, Victoria Reef, **Charters Towers Goldfield**, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* W.C.T.

2866. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Blue Peter Lease and No. 1 E., Blue Peter Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2867. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Bonnie Doon Lease, (Bonnie Doon Reef), Charters Towers Goldfield (*ante*). *Ref* W.C.T.

2868. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Bonnie Dundee Lease (Queen, Victory, and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

2869. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Brilliant Block Lease (Brilliant Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2870. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Brilliant Central G.M. Lease (Brilliant, Victory, and Queen Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2871. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Brilliant Extd. Lease (Brilliant Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

2872. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Brilliant P.C. (Brilliant Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2873. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Brilliant and St. George United G.M. Lease, St. George, Brilliant and Victory Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2874. ——. *Assoc.with* Gold, Iron Pyrites, Zinc-Blende, and Chlorite, in quartz. *Loc.* Bryan O'Lynn Mine, Queen Reef, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, pp. 36 and 49 (1889).

2875. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc-Blende, in quartz and calcite. *Loc.* Carrington Lion 1 and 2 E. Lease (Lion Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2876. ——. *Assoc.with* Gold, Copper Pyrites, Iron Pyrites, Zinc-Blende, and Barytes, in quartz and calcite. *Loc.* Carrington's United Mines Ltd. Lease (Lion Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

2877. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Clark's Brilliant, Worcester, and Victory Leases (Victory Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2878. Galena. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Copper carbonate, and Zinc-Blende. *Loc.* Comstock or Stockholm Reef, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

2879. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Craven's Caledonia Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2880. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Dan O'Connell Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2881. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Day Dawn Block and Wyndham Lease (Day Dawn and Wyndham Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

2882. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Day Dawn Gold Mines G.M. Lease (Day Dawn Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2883. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Day Dawn P.C. (Day Dawn, Talisman, Peabody, and North Australian Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and A.R.D.M., p. 185 (1894).

2884. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Day Dawn 3A West, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2885 ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* East Mexican G.M. Lease (Day Dawn and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2886. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Golden Alexandra Lease (Golden Alexandra Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2887. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Golden Gate Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2888. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Imperial G.M. Lease (Imperial Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2889. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Kelly's Queen Block Lease (Brilliant and Victory Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2890. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Mafeking P.C. G.M. Lease (Mafeking Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2891. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Marshall's Queen G.M. Lease (Queen, Brilliant, and Victory Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2892. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Mary and Rainbow Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2892A. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Mexican Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 28 (1879).

2893. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Millchester G.M. Lease (Old Identity Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2894. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Millet's Wellington Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2895. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Mills' Day Dawn United G.M. Lease (Day Dawn Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2896. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* New Brilliant Freeholds G.M. Lease (Day Dawn and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2897. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* New Craven's Caledonia G.M. Lease (Caledonia, Just-in-Time, and Victoria Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2898. ——. *Assoc.with* Gold and Iron Pyrites, in quartz and calcite. *Loc.* New Queen G.M. Lease (Queen, Brilliant, and Victory Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2899. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* New Towers Extd. Mine, Charters Towers Goldfield (*ante*). *Percentages:* Iron Pyrites = 61·2; Zinc-Blende = 21·0; Galena = 2·2; Silica = 15·6. *Yield:* Gold = 3·25 per ton. *Ref.* A.R.D.M., p. 185 (1894).

2900. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Papuan, Brilliant, and Victoria G.M. Leases (Brilliant, Victoria, and Victory Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2901. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Pfeiffer's Day Dawn Lease (Day Dawn Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2902. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Phœbe G.M. Lease (Victory and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2903. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Queen Central G.M. Lease (Victoria Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2904. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Queen Central Block G.M. Lease (Victoria Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2905. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Queen Deep Mines Lease (Queen Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2906. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Queen's Cross G.M. Lease (Victoria and Just-in-Time Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2907. ——. *Assoc.with* Gold, Iron Pyrites, Zinc-Blende, Calcite, Gypsum, and Chlorite, in quartz. *Loc.* Queen Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 26 (1879), P.R.S.Q., vol. 4, pp. 36 and 47 (1887), G.S.M., and W.C.T.

2908. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Quinn's Block G.M. Lease (Millchester Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2909. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Rainbow Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2910. ——. *Assoc.with* Gold and Iron Pyrites, in quartz and calcite. *Loc.* Roger's Millchester Block (Millchester Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2911. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Ruby G.M. Lease, (Ruby and Rose of England Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2912. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Ruby United G.M. Lease (Ruby Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2913. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Stockholm (Brilliant G.M. Co.) Lease, Stockholm Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2913A. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz reef. *Loc.* St. Patrick Block, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 28 (1879).

2914. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende. *Loc.* Sunburst P.C., Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

2914A. ——. *Assoc.with* Gold and Iron Pyrites, in serpentine and quartz. *Loc.* Sunlight Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2915. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Union Jack Consolidated Mines (Victoria Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2916. ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel, in quartz. *Loc.* Victoria Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2917. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Victoria and Caledonia Block Lease (Just-in-Time and Victoria Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2918. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Victoria and Queen G.M. Lease (Victoria and Caledonia Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

2919. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Victory, Charters Towers, G.M. Lease (Victory and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2920. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Victory G.M. Lease (Victory Reef), Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

2921. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Wallis's Day Dawn Lease (Day Dawn Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

2921A. ——. *Assoc.with* Silver, Cerussite. *Loc.* Nr. Chinaman's Gully, about 2½ miles E. of Mt. Leyshon. *Co.* Davenport; *Dist.* Kennedy North. *Assay:* Silver = 72 oz. per ton; Lead = 65·2 per cent. *Ref.* A.R., p. 229 (1910).

2921B. ——. *Assoc.with* Gold, Silver, Cerussite, and Limonite, in lode. *Loc.* ¾ mile E. of Mt. Leyshon, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

2921C. ——. *Assoc.with* Gold, Silver, Massicot, Anglesite, and Cerussite, in lode. *Loc.* Right-hand br. of One-mile Gully, 1½ mile S.E. of Mt. Leyshon. *Co.* Davenport (*ante*). *Ref.* A.R., 259 (1910).

2922 Galena. *Assoc.with* Gold, Iron Pyrites and Copper Pyrites, in quartz. *Loc.* Livingstone Reef, 1 mile S.S.E. of Bluff Stn., 9 miles S.E. of Mt. Leyshon, 19 miles S.S.E. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

2923. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Swain's Reef, 70-Mile Diggings, 8 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.M.

2923A. ——. *Assoc.with* Gold, in quartz. *Loc.* Severn Reef, Broughton, 10 miles E. byS. of Charters Towers. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.M.

2924. ——. *Assoc.with* Gold and Zinc-Blende, in quartz and calcite. *Loc.* Donnybrook Reef, Donnybrook Mining Centre, 6½ miles S. of Ravenswood Rail. Stn. (Gt. Northern line), **Ravenswood Goldfield,** 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

2924A. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Erin's Hope Reef, Donnybrook Mining Centre (*ante*). *Ref.* G.S.Q. Pub. 152, p. 10 (1898).

2925. —— *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* J.R.D. and Premier Reefs, Hillsborough (Eight Mile), 5¾ miles N.N.E. of Ravenswood, Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 152, p. 9 ((1894).

2926. ——. *Assoc.with* Gold and Silver, in lead ochre. *Loc.* Comstock Silver Mine, nr. Plumtree Cr., 3½ miles E.S.E. of Ravenswood Rail. Stn. (Gt. Northern line), Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

2927. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. Crescent G.M. Lease (New Moon Reef), Ravenswood Township, Ravenswood Goldfield (*ante*). *Ref.* W.C.T.

2928. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* General Grant Reef, Ravenswood Township (*ante*). *Ref.* G.S.M.

2929. ——. *Assoc.with* Copper Pyrites and Zinc-Blende, in quartz. *Loc.* Sunset Reef, Ravenswood Township (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1897).

2930. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc-Blende, in quartz. *Loc.* Sunset and General Grant Reefs, Ravenswood Township (*ante*). *Ref.* G.S.Q. Pub. 183, pp. 2-6 (1903).

2931. ——. *Assoc.with* Iron Pyrites. *Loc.* Big Ben Silver Mine, One-Mile, Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

2932. ——. *Assoc.with* Zinc-Blende. *Loc.* Bonnie Dundee Silver Mine, One Mile (*ante*). *Assay:* Silver = 100 oz. per ton. *Ref.* P.R.S.Q., vol. 4, p. 48 1887).

2933. ——. *Assoc.with* Zinc-Blende and Stibnite. *Loc.* Hannon's Silver Mine, One Mile (*ante*). *Ref.* G.S.M.

2934. ——. *Assoc.with* Silver, Stibnite, Zinc-Blende, Iron Pyrites, and Copper Pyrites, in lode. *Loc.* King's Silver Mine, One Mile (*ante*). *Analysis:* Copper = 16·25; Antimony = 26·30; Iron = 8·49; Zinc = 8·75; Sulphur = 17.02; Silicious matter = 7·31; Silver = 15·35 per cent. = 5013 oz. per ton. *Ref.* G.S.Q. Pub. 152, p. 11 (1897).

2935. ——. *Assoc.with* Zinc-Blende. *Loc.* Pyramid Silver Lease, One Mile (*ante*). *Analysis:* Zinc-Blende = 34·23 per cent.; Lead = 42·01 per cent.; Sulphur = 22·80 per cent.; Iron = 1·11 per cent. *Ref.* P.R.S.Q., vol. 4 (1887).

2936. ——. Rainbow Silver Mine, One Mile (*ante*). *Ref.* G.S.M.

2937. ——. *Assoc.with* Gold, Silver, and Cerussite, in quartz. *Loc.* Ravenswood Silver Mine, One Mile (*ante*). *Ref.* G.S.Q. Pub. 125, p. 34 (1897), and P.R.S.Q., vol. 4, p. 47 (1887).

2938. ——. *Assoc.with* Gold, Zinc-Blende, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Cousin Jack Reef, 2½ miles S.E. of Ravenswood Rail. Stn., Sandy Cr. Mining Centre, Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

2939. ——. *Assoc.with* Cerussite. *Loc.* Esperanza Silver Mine, 3¼ miles E.byS. of Ravenswood Rail. Stn., Sandy Cr. Mining Centre (*ante*). *Ref.* G.S.M.

2940. ——. *Assoc.with* Gold and Iron Pyrites. *Loc.* Fanny Fern Mine, 2½ miles S.E. of Ravenswood Rail. Stn., Sandy Cr. Mining Centre (*ante*). *Yield:* Gold = 6 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 35 (1897).

2941. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende. *Loc.* John Bull Block, 3 miles E.S.E. of Ravenswood Rail. Stn., Sandy Cr. (*ante*). *Ref.* G.S.M

2942. ——. *Assoc.with* Gold, Iron Pyrites, Zinc-Blende, and Copper Pyrites, in quartz and steatite. *Loc.* Politician Mine, 2¾ miles S.E. of Ravenswood Rail. Stn., Sandy Cr. (*ante*). *Ref.* P.R.S.Q., vol. 4, pp. 47 and 48 (1887).

2943. ——. *Assoc.with* Silver. *Loc.* Sandy Cr., 3 miles E.S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Contents:* Lead = 65 per cent., Silver = 259 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

2944. ——. *Assoc.with* Gold, Iron Pyrites, and Cerussite, in quartz. *Loc.* Star of the South Reef, 12 miles S.W.byS. of Ravenswood Rail. Stn., Connolly Cr., Trieste Mining Centre, Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 10 (1900), and G.S.M.

2945. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Trieste Reef, 10 miles S. of Ravenswood Rail. Stn., Trieste Mining Centre (*ante*). *Ref.* G.S.Q. Pub. 152, p. 10 (1900).

2946. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Bell Gay Reef, Mt. Remarkable, 6 miles W.byN. of Pentland Rail. Stn. (Gt. Northern line), 72 miles (by rail and road) S.W.byW. of Charters Towers, Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 5 (1891).

2947. ——. In quartz reef. *Loc.* Gully nr. Morning Star Reef, Mt. Remarkable (*ante*). *Ref.* G.S.Q. Pub. 73, p. 4 (1891).

2948. ——. *Assoc.with* Cerussite, in quartz lode. *Loc.* Specimen Cr., Mt. Remarkable (*ante*). *Assays:* (1) Silver = 6 oz. per ton, Lead = 73· per cent.; (2) Silver = 4 oz. per ton, Lead = 48·75 per cent. *Ref.* G.S.Q. Pub. 73, p. 5 (1891).

2949. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Mystery Reef, Pentland, 66 miles (by rail) S.W.byW. of Charters Towers, Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

2950. ——. *Assoc.with* Gold, Iron Pyrites, and Ironstone, in quartz. *Loc.* Harp of Erin Reef, Upper Cape, 17 miles W.byN. of Cape R. Rail. Stn., 77 miles (by rail and road) W.S.W. of Charters Towers, Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

2951. ——. *Assoc.with* Gold, in quartz. *Loc.* Occidental Reef, Upper Cape (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

2952. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Agnes Howson Reef, New Homestead Diggings, 46 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 12 (1891).

2953. ——. *Assoc.with* Gold, Silver, Redruthite, Copper carbonate, and Iron Pyrites, in quartz. *Loc.* Main's Reef, Old Homestead Diggings (*ante*). *Ref.* (and *Assays*): G.S.Q. Pub. 73, p. 11 (1891), and G.S.M.

2953A. ——. *Assoc.with* Malachite, in quartz. *Loc.* Old Harry Show, Wyandotte, 48 miles S.E. of Mt. Surprise Rail. Stn. (Etheridge line). *Co.* Gunnawarra; *Dist.* Kennedy North. *Ref.* A.R., p. 178 (1909).

2953B. ——. *Assoc.with* Anglesite and Cerussite, in quartz lode. *Loc.* Valley of Lagoons Run, 6 miles E. of Wyandotte Tel. Stn., about 64 miles S.E.byE. of Mt. Surprise Rail. Stn. *Co.* Gunnawarra (*ante*). *Ref.* A.R., p. 176 (1909).

2954. ——. *Assoc.with* Anglesite and Copper Pyrites, in lode. *Loc.* Dawn or Don R., 35 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Assay:* Silver = 9 oz. 4 dwt. per ton; Lead = 78·2 per cent.; Copper = trace; Bismuth = trace. *Ref.* A.R., p. 61 (1906).

2954A. ——. *Assoc.with* Massicot. *Loc.* Cardigan Stn., S. side of Burdekin R., 19 miles S.W. of Ravenswood. *Co.* Murray; *Dist.* Kennedy North. *Ref.* A.R., p. 306 (1911).

2955. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Currency Reef, Dreghorn Diggings, Burdekin R., 15 miles S.S.W. of Ravenswood Rail. Stn. *Co.* Murray (*ante*). *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

2956. ——. *Assoc.with* Copper Pyrites. *Loc.* Jack's Cr., 56 miles N.W. of Charters Towers. *Co.* O'Connell; *Dist.* Kennedy North. *Assay:* Silver = 35 oz. 18 dwt. per ton; Copper = 7·0 per cent. *Ref.* A.R., p. 96 (1907).

2957. ——. Bowen R., Bowen R. Coalfield, about 50 miles S.W. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 4 (1879).

2957A. ——. Flagstone Cr., Bowen R. Coalfield (*ante*). *Ref.* G.S.Q. Pub. 4, p. 4 (1879).

NOTE: A silver-lead mine is said to have been worked here 20 years ago.

2957B. ——, containing Silver. *Loc.* Mitchell Plains, N. of Mt. Mackenzie, 24 miles W.S.W. of Bowen. *Co.* Salisbury (*ante*). *Ref.* B.D.

2958. ——. *Assoc.with* Cerussite, Copper carbonate, Chrysocolla, Manganese-dioxide, and Garnet, in gossan. *Loc.* Black Star Lease (116), 1¾-mile N.byW. of Ewan, Running R., **Kangaroo Hills Mineral Field**, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

2959. Galena. In ferruginous garnet. Black Star South Lease (199), 1½ mile N.byW. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

2960. ——. *Assoc.with* Bornite, Cerussite, and Copper Carbonate, in lode. *Loc.* Blue Bell Lease (226), 1¼ mile N.W. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

2961. ——. *Assoc.with* Malachite, Azurite, Cerussite, and Manganese-dioxide. *Loc.* Bonnybrook Lease (178), 1½ mile N.W.byN. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

2962. ——. In lode. Caledonian Lease (174), ¾-mile N.E.byN. of Ewan, Running R. (*ante*). *Assay:* Silver = 59 oz. 13 dwt. 22 gr. per ton; Lead = 57 per cent.; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 9 (1892).

2963. ——. *Assoc.with* Cerussite and traces of Copper, in lode. *Loc.* Regner and Nevan's Hole, Day Dawn Lease (170), 1¼ mile N. of Ewan, Running R. (*ante*). *Assay:* Silver = 17 dwt. 23 gr. per ton; Copper = 4·1 per cent.; Lead = 29·5 per cent. *Ref.* G.S.Q. Pub. 82, p. 4 (1892).

2964. ——. *Assoc.with* Silver (native), Cerussite, Malachite, Chrysocolla, Mispickel, Zinc-Blende, Hematite, and Manganese-dioxide, in lode. *Loc.* Hidden Treasure Lease (165), 1¾ mile W.N.W. of Ewan, Running R. (*ante*). *Assays: See* No. 1241. *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), and 82, p. 7 (1892).

2965. ——. *Assoc.with* Azurite, Kaolin, Lithomarge, and Steatite, in quartz lode. *Loc.* Hidden Treasure E. Lease (166), 1½ mile N.W. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 82, p. 7 (1892).

2966. ——. *Assoc.with* Cerussite, Manganese-dioxide, and Ironstone, in chloritic lode. *Loc.* Hidden Treasure E. Lease (166), 1½ mile N.W. of Ewan, Running R. (*ante*). *Assays:* (1) Silver = 41 oz. 11 dwt. 8 gr. per ton; Lead = 30·5 per cent. (2) Silver = 37 oz. per ton; Lead = 72 per cent. (3) Silver = 42 oz. per ton; Lead = 40 per cent. (4) Silver = 65 oz. per ton; Lead = 20 per cent. *Ref.* G.S.Q. Pub. 82, pp. 6 and 7 (1892).

2967. ——. *Assoc.with* Cassiterite and Copper Pyrites. *Loc.* Kangaroo Hills Tin Freehold, about 3 miles N.E.byE. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 167, p. 5 (1901).

2968. ——. One mile S. of Mt. Benham, nr. Ewan, Running R. (*ante*). *Assay:* Gold = 2 dwt. 9 gr. per ton; Silver = 3 oz. 3 dwt. 13 gr. per ton; Lead = 23·5 per cent. *Ref.* A.R., p. 55 (1906).

2969. ——. *Assoc.with* Cerussite, Malachite, Chrysocolla, Lievrite, Manganese-dioxide, and Garnet, in lode. *Loc.* Mt. Hishon Lease (210), 1½ mile N.W.byN. of Ewan, Running R. (*ante*). *Assay:* Gold = trace; Silver = 2 oz. 20 gr. per ton; Lead = 22·3 per cent. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

2970. ——. *Assoc.with* Cerussite, in quartz and garnet rock. *Loc.* Mt. Hishon 1 E. Lease (224), about 1½ mile N.N.W. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

2971. ——. *Assoc.with* Cerussite, Chrysocolla, Pyrolusite, Calcite, and Gypsum, in garnet rock. *Loc.* Mt. Moss S. Lease (168), (Elsie's Shaft), about 2 miles N. of Ewan, Running R. (*ante*). *Assay:* Silver = 16 oz. 6 dwt. 16 gr. per ton; Lead = 69·8 per cent.; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

2972. ——. *Assoc.with* Copper Pyrites, Bornite, Cuprite, Tenorite, Copper carbonate, Iron Pyrites, Ironstone, and Zinc-Blende, in lode. *Loc.* Mt. Thekla Copper and Silver Mine, 4 miles N. of Ewan, Running R. (*ante*). *Assays:* (1) Silver = 86 oz. 17 dwt. per ton; Copper = 21·37 per cent.; Lead = 8·65 per cent.; Zinc = 4 to 5 per cent. (2) Silver = 121 oz. per ton; Lead = 22 per cent. *Average of Assays:* Silver = 26 oz. 12 dwt. per ton; Copper = 22 per cent. *Carbonate Ores Assay:* Silver = 22 oz. 17 dwt. per ton; Copper = 15·75 per cent.; Zinc = 4 per cent. *Ref.* G.S.Q. Pub. 167, p. 7 (1901).

2973. ——. *Assoc.with* Azurite and Atacamite, in quartz. *Loc.* Rattler Lease (233), about 1¼ mile N. of Ewan, Running R. (*ante*). *Assays:* (1) Silver = 17 dwt. 23 gr. per ton. (2) Silver = 9 oz. 16 dwt. per ton; Copper = 3½ per cent. (3) Silver = 22 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

2974. ——. *Assoc.with* Native Silver, Bornite, Cuprite, Copper Pyrites, and Copper carbonate, in lode. *Loc.* True Blue Lease (161), ¾-mile N.N.W. of Ewan, Running R. (*ante*). *Assays:* (1) Silver = 60 oz. per ton; Copper = 27·5 per cent. (2) Silver = 56 oz. per ton; Copper = 31·4 per cent. *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

2975. ——. *Assoc.with* Tile Ore, Hematite, Cerussite, Bornite, Copper Pyrites, and Mispickel, in lode. *Loc.* Wallaroo Lease (162), 4¼ miles E. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

2976. ——. Will's Shaft, Ewan, Running R. (*ante*). *Ref.* G.S.M.

2977. ——. *Assoc.with* Redruthite and Zinc-Blende, in lode. *Loc.* Macauley Cr. Copper and Silver Lodes, 5 miles S.byW. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 167, pp. 9, 10 (1901).

2978. ——. *Assoc.with* Cerussite, Copper carbonate, and Hematite, in gossan. *Loc.* Mt. Brown Lease (183), Mt. Brown, about 2 miles W.byS. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 82, pp. 9, 10 (1892).

2979. ——. *Assoc.with* Copper carbonate, in quartz lode. *Loc.* Pinnacles Extd. Lease (220), about 2 miles S.W. of Mt. Brown, 4 miles S.W.byW. of Ewan, Running R. (*ante*). *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

2980. ——. *Assoc.with* Zinc Blende, Cerussite, Minium, Copper carbonate, Chrysocolla, and Hematite, in lode. *Loc.* White Wings P.A., Mt. Brown, about 2½ miles W.byS. of Ewan, Running R. (*ante*). *Assays:* Silver = 16 oz. and 2 oz. 7 dwt. per ton. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

2981. ——. *Assoc.with* Minium, Anglesite, Cerussite, Pyromorphite, and Linarite, in lode. *Loc.* Alpha Silver-Lead Mine, **Star R. (Argentine) Mineral Field**, 50 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Assay:* Lead = 79 per cent.; Silver = 107 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

2982. ——. *Assoc.with* Minium and Ironstone. Ard. Righ Silver-Lead Mine, Star R. Mineral Field (*ante*). *Assay:* Silver = 57 oz. per ton; Lead = 61 per cent. *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

2983. ——. *Assoc.with* Copper Pyrites, Malachite, Minium, Cerussite, Mispickel, Manganese-dioxide, Ironstone, and Iron Ochre, in lode. *Loc.* Colorado Silver Mine, Star R. Mineral Field (*ante*). *Assays:* Silver = 16 oz. and 42 oz. per ton; Lead = 16 and 48 per cent. *Ref.* G.S.Q. Pub. 26, p. 7 (1886).

2984. ——. *Assoc.with* Minium and Cerussite, in gossan. *Loc.* Croesus Silver-Lead Mine, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

2985. ——. *Assoc.with* Minium, Anglesite, and Ironstone. *Loc.* Hero Silver Mine, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, pp. 2, 3 (1886).

2986. ——. *Assoc.with* Minium, Massicot, Cerussite, and Ironstone. *Loc.* John Bull Silver Mine, Star R. Mineral Field (*ante*). *Assay:* Lead = 61½ per cent.; Silver = 52 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

2987. ——. *Assoc.with* Iron Pyrites, Zinc-Blende, and Stibnite. *Loc.* Murphy and Godson's M.L. (73), Star R. Mineral Field (*ante*). *Assay:* Lead = 52½ per cent.; Silver = 81½ oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

2988. ——. Nevada Mine, Star R. Mineral Field (*ante*). *Ref.* G.S.M.

2989. ——. *Assoc.with* Minium and Cerussite, in lode. *Loc.* Nonpareil Silver-Lead Mine, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

2990. ——. *Assoc.with* Iron Pyrites and Zinc-Blende, in quartz lode. *Loc.* Northbrook (A. Beazley's Sel.) Lease (179), Star R. Mineral Field (*ante*). *Assays:* (1) Lead = 65 per cent.; Silver = 70 to 90 oz. per ton. (2) Silver = 40 to 55 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

2991. ——. *Assoc.with* Cerussite, Minium, and Ironstone, in schistose and gossany lode. *Loc.* Overlander Silver Mine, Star R. Silver Field (*ante*). *Assay:* Lead = 65 per cent.; Silver = 150 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

2992. ——. *Assoc.with* Minium and Cerussite. *Loc.* Prince of Wales Mine, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

2993. ——. *Assoc.with* Cerussite and Lead Ochre. *Loc.* Silver Sel. (169), Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

2994. ——. *Assoc.with* Lead Ochre and Ironstone, in gossan. *Loc.* Southern Cross Silver Mine, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

2995. ——. *Assoc.with* Minium, Anglesite, and Hematite, in quartz. *Loc.* Struck Oil Silver Lode, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

2996. ——. *Assoc.with* Minium, Anglesite, Cerussite, and Ironstone, in lode. *Loc.* St. John's Silver-Lead Lease, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

2997. ——. *Assoc.with* Gold and Hematite, in quartz. *Loc.* Thermopylae Reef, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

2998. ——. *Assoc.with* Minium, Anglesite, and Cerussite, in ferruginous lode. *Loc.* True Blue Mine, Star R. Mineral Field (*ante*). *Assay:* Lead = 72 per cent.; Silver = 68 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

2999. ——. *Assoc.with* Gold, Iron Pyrites, Minium, Anglesite, Cerussite, Zinc-Blende, and Siderite, in quartz lode. *Loc.* Union Silver Mine, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886), and G.S.M.

3000. ——. *Assoc.with* Anglesite, Minium, Cerussite, Iron Pyrites, and Mispickel, in lode. *Loc.* Venture Silver Mine, Star R. Mineral Field (*ante*). *Assays:* (1) Lead = 68 per cent.; Silver = 82 oz. per ton. (2) Lead = 60 per cent.; Silver = 69 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

3001. ——. *Assoc.with* Massicot, Anglesite, Cerussite, and Ironstone. *Loc.* Washington (1 and 2) Mines, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

3002. ——. *Assoc.with* Silver, Azurite, and Barytes. *Loc.* Star R. (Argentine Silver Field (*ante*). *Ref.* L.B. 1, p. 479 (1883).

3003. ——. *Assoc.with* Gold, Iron Pyrites, Limonite, Turgite, Ironstone, and Copper Pyrites, in quartz. *Loc.* Broken R. Gold and Silver Co.'s Mine, Bee Cr. Diggings, Eungella Goldfield, 10 miles W. of Finch-Hatton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* (and *Assays*): G.S.Q. Pubs. 54, pp. 2 and 3 (1889), and 229, pp. 31, 32 (1910).

3004. ——. *Assoc.with* Gold, Iron Pyrites, Siderite, and Zinc-Blende, in quartz. *Loc.* Coral Tree P.C., Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), and 229, p. 29 (1910).

3005. ——. *Assoc.with* Gold, Copper Pyrites, Iron Pyrites, Limonite, Siderite, Malachite, and Zinc-Blende, in quartz. *Loc.* Highland Mary P.C., Bee Cr. Diggings (*ante*). *Ref.* (and *Assay*): G.S.Q. Pubs. 54, p. 2 (1889), and 229, p. 30 (1910).

3005A. ——. *Assoc.with* Gold, in gossany ore. *Loc.* Lord Nolan (Queen) Reef, Bee Cr. Diggings (*ante*). *Ref.* (and *Assays*): G.S.Q. Pub. 229, p. 31 (1910).

3006. ——. In quartz. Martin's Reef, Bee Cr. Diggings (*ante*). *Assay:* Silver = 70 oz. per ton. *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

3007. ——. *Assoc.with* Malachite, Azurite, and Iron Pyrites, in quartz. *Loc.* Duffey's Claim, Blue Mountain, **Mt. Spencer** Gold and Mineral Field, 6 miles S.W. of Eton Rail. Stn. (Mackay line), 29 miles (by rail and road) S.W.byS. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), and 229, pp. 18, 19 (1910).

3008. ——. *Assoc.with* Copper Pyrites, Malachite, and Zinc-Blende, in quartz. *Loc.* Mackay's Mine, Blue Mountain, Mt. Spencer Gold and Mineral Field (*ante*). *Assay:* Gold = 3 dwt. 6 gr. per ton; Silver = 2 oz. 5 dwt. 17 gr. per ton; Lead = 11 per cent. *Ref.* G.S.Q. Pub. 53, p. 10 (1889).

3009. ——. *Assoc.with* Gold, Copper Pyrites, Tetrahedrite, Tenorite, Malachite, Azurite, and Ironstone, in quartz. *Loc.* Pine Vale Cr. Copper Mine, Mt. Spencer Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), and 229, pp. 12-17 (1910).

3010. ——. *Assoc.with* Copper Pyrites and Zinc-Blende, in quartz. *Loc.* Ben Mohr M.L. (8), Mt. Spencer Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 229, p. 19 (1910).

3011. ——. *Assoc.with* Cerussite, Copper Pyrites, Malachite, Azurite, Iron Pyrites, Mispickel, and Zinc-Blende. *Loc.* **Mt. Barker** Silver Mines, 3 miles N.W. of Eungella Stn., 33 miles (by rail and road) W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* Kennedy South. *Assay:* Silver = 47 oz. per ton; Lead = 73·4 per cent.; Zinc = 6·8 per cent. *Ref.* G.S.Q. Pubs. 54, p. 3 (1889), 181 (1903), and 229, pp. 34, 35 (1910).

3012. ——. *Assoc.with* Cerussite, Iron Pyrites, and Zinc-Blende, in lode. *Loc.* Bonnie Dundee Silver Mine, **Eukalunda,** Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Assays: See* No. 1288. *Ref.* G.S.Q. Pub. 57, p. 6 (1889).

3013. ——. *Assoc.with* Minium, Cerussite, Zinc-Blende, Iron Pyrites, and Copper Pyrites, in lode. *Loc.* General Gordon Silver-Lead Mine, Eukalunda (*ante*). *Assays: See* No. 1289. *Ref.* G.S.Q. Pub. 57, p. 6 (1889).

3014. ——. Macdonald's Lode, Eukalunda (*ante*). *Ref.* G.S.M.

3015. ——. *Assoc.with* Minium, Cerussite, and Clay, in lode, in slate. *Loc.* New Year's Gift Mine, Two-mile Cr., Eukalunda (*ante*). *Assay: See* No. 1290. *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

3016. ——. *Assoc.with* Minium, Cerussite, Anglesite, Zinc-Blende, Iron Pyrites, and Ironstone, in lode and vein. *Loc.* Pyramid Silver Mine, Eukalunda (*ante*). *Assays:* (1) Lead = 58·1 per cent.; Silver = 78 oz. per ton. (2) Lead = 58·45 per cent.; Silver = 71 oz. per ton. (3) Lead = 69·1 per cent.; Silver = 80½ oz. per ton. *Ref.* G.S.Q. Pub. 57, pp. 2-4 (1889).

3017. ——. *Assoc.with* Silver, Minium, Cerussite, Iron Pyrites, Ironstone, and Zinc-Blende, in lode. *Loc.* Rob Roy Silver-Lead Mine, Eukalunda (*ante*). *Assays:* (Galena) (1) Lead = 63·75 per cent.; Silver = 24½ oz. per ton; (2) Lead = 71·8 per cent.; Silver = 66½ oz. per ton. (Zinc-Blende) (3) Zinc = 32·78 per cent.; Silver = 5 oz. per ton; (4) Zinc = 20 per cent.; Silver = 45 oz. per ton. *General Assay:* Lead = 20·72 per cent.; Zinc = 31·33 per cent.; Silver = 22 oz. 10 dwt. 19 gr. per ton; Gold = trace; Copper = trace; Iron = large quantity. *Ref.* G.S.Q. Pub. 57, pp. 4-6 (1889).

3018. ——. *Assoc.with* Silver, Minium, and Cerussite, in lode. *Loc.* Silver King Silver-Lead Mine, Eukalunda (*ante*). *Assay: See* No. 1293. *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

3019. ——. *Assoc.with* Minium, in gossan. *Loc.* Stackpool's Silver Lease, Eukalunda (*ante*). *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

3020. ——. *Assoc.with* Native Silver and Copper ore. *Loc.* Sunbeam Silver Mine, Eukalunda (*ante*).

3021. ——. *Assoc.with* Gold, Minium, and Mispickel, in lode. *Loc.* Venture Silver Mine, Eukalunda (*ante*). *Assays: See* No. 4147. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

3022. ——. *Assoc.with* Gold, Copper Pyrites, Malachite, Azurite, Native Bismuth, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Hematite, and Ironstone, in lode. *Loc.* Daisy Bismuth Mine, N. of Mt. Wyatt and Bowen Road, 3 miles E. of Eukalunda, Sellheim Mineral Field. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 57, p. 8 (1889), and G.S.M.

3022A. ——. *Assoc.with* Copper Pyrites, and Zinc-Blende, in quartz. *Loc.* nr. Coolan's P.A., Mt. Wyatt Goldfield, about 60 miles S.S.E. of Ravenswood. *Co.* Sellhem (*ante*). *Ref.* G.S.M

3022B. ——. *Assoc.with* Silver, Anglesite, and Cerussite, in lode. *Loc.* Black Cr., br. of Police Cr., about 30 miles S.byE. of Mt. Wyatt Goldfield. *Co.* Sellheim (*ante*). *Ref.* A.R., p. 221 (1910).

3023. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Crown Reef, Copperfield, 5 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 27, p. 6 (1886).

3024. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Palm-tree Reef, Copperfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 6 (1886).

3025. ——. *Assoc.with* Minium and Cerussite, in veins of quartz in sandstone. *Loc.* Reefs, E. of Mt. Clarke, Mt. Britton Goldfield, 75 miles (by road) W.S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Assay:* Silver = 130 oz. per ton. *Ref.* G.S.Q. Pub. 39, p. 6 (1887)

3026. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Zinc-Blende, and Mispickel, in silicious lode. *Loc.* Silver-Lead Deposit, Por. (46), Par. of Monsildale, head of Brisbane R., 36 miles N.byW. of Esk Rail. Stn., 102 miles (by rail and road) N.N.W. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Ref.* (and *Assays*) G.S.Q. Pub. 169, pp. 1-4 (1907).

3027. ——. *Assoc.with* Iron Pyrites, Massicot, Bismite, Mispickel, and Chlorite, in quartzite and slate. *Loc.* Blackbutt, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* O.R.

3028. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Tenorite, and Zinc-Blende, in altered sedimentary rocks. *Loc.* Pyramid Copper and Silver Mine (Saxon shaft), Cressbrook Cr., 12 miles N. of Esk Rail. Stn., Brisbane Valley Br. line, 79 miles (by rail and road) W.N.W. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 169, p. 6 (1901).

3029. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Zinc-Blende, in sedimentary rocks. *Loc.* Rising Star Copper Area, Cressbrook Cr. (*ante*). *Assay:* Copper = 3·75 per cent.; Silver = 1 oz. 13 dwt. 23 gr. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 169, p. 4 (1901).

3030. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Sandy Mt., Crow's Nest Rail. Stn., 34 miles (by rail) N.N.E. of Toowoomba. *Co.* Cavendish; *Dist.* Moreton. *Ref.* A.R., p. 148 (1908).

3030A. ——. *Assoc.with* Iron Pyrites and Zinc Blende, in lode. *Loc.* Kipper Cr., 8 miles W. of Esk Rail. Stn. (Brisbane Valley line). *Co.* Cavendish (*ante*). *Assay:* Silver = 5 oz. 13 dwt., Lead = 34 per cent., Zinc = 5 per cent., Gold, trace. *Ref.* A.R., p. 245 (1910).

3031. ——. In gossany quartz. Alexandra Queen P.A., Mt. Langan, Emu Cr., 14½ miles W.N.W. of Kannungar Rail. Stn. (Brisbane Valley line). *Co.* Cavendish (*ante*). *Ref.* L.C.B., and Q.G.M.J., vol. 7, p. 467 (1906).

3032. ——. *Assoc.with* Gold, Massicot, and Zinc-Blende, in gossany quartz. *Loc.* Iceberg P.A., Mt. Langan (*ante*). *Ref.* L.C.B., and Q.G.M.J., p. 467 (1906).

3032A. ——. *Assoc.with* Gold, Silver, and Zinc-Blende, in lode. *Loc.* Langan's Mine, Mt. Langan (*ante*). *Ref.* A.R., p. 213 (1910).

3033. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Anglesite, Massicot, Mispickel, and Limonite, in gossan and slate. *Loc.* Silver Knob P.A., Mt. Langan (*ante*). *Assay:* Silver = 31 oz. per ton; Lead = 13 per cent.; Gold = trace. *Ref.* Q.G.M.J., vol. 7, p. 467 (1906).

3033A. Galena. *Assoc.with* Copper Pyrites and Zinc-Blende, in slate and quartzite. *Loc.* Deep Rocky Gorge, between Murphy's Cr. and Perseverance, 4½ miles N.byE. of Murphy's Cr. Rail. Stn. (Main line). *Co.* Cavendish; *Dist.* Moreton. *Ref.* O.R. (1910).

3034. ——. *Assoc.with* Copper Pyrites, in altered tuffs. *Loc.* Moller and Bennett's Copper Workings, Por. 52v, about 4½ miles N. of Murphy's Cr. Rail. Stn. *Co.* Cavendish (*ante*). *Ref.* B.D.

3035. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reefs. *Loc.* Sel. 194, Brookfield Cr., 10 miles W.S.W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 63, p. 2 (1890).

3035A. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz. *Loc.* Perseverance Reef, Mountain Camp, Enoggera, 6½ miles W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 143, p. 9 (1899), and G.S.M.

3036. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Zinc-Blende, in quartz. *Loc.* Friend's Claim, Barmundoo (Tableland) Goldfield, 28 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Assay:* Gold = 14 dwt., Silver = 2 oz. 2 dwt. 11 gr. per ton. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

3036A. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende. *Loc.* Georgina Mine, Barmundoo Goldfield (*ante*). *Ref.* G.S.M.

3037. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz. *Loc.* Griffith's Reef, Diggers' Cr., Barmundoo Goldfield (*ante*). *Yield: See* No. 4235. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

3038. —— (Argentiferous). Silver Queen Mine, Barmundoo Goldfield (*ante*). *Ref.* G.S.M.

3039. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc-Blende, in quartz and calcite. *Loc.* Stand-by Reef, Mt. Jacob Mine, **Bompa** Goldfield, about 4 miles E.byS. of Littlemere Rail. Stn. (Boyne Valley line), 56 miles (by rail and road) S.byE. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 58, p. 7 (1890).

3040. ——. *Assoc.with* Gold, in quartz. *Loc.* Federal Block G.M. Lease 52, Eastern Boyne Goldfield, 26½ miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 150, p. 9 (1900).

3041. ——. *Assoc.with* Gold, Silver, Minium, Anglesite, Cerussite, Massicot, Hematite, and Limonite, in lode. *Loc.* Bompa Silver-Lead Mines, 2 miles W.byS. of Littlemere Rail. Stn. (Boyne Valley line), 53 miles (by rail and road) S. of Gladstone. *Co.* Clintn (*ante*). *Ref.* G.S.Q. Pub. 159, pp. 7, 8 (1901).

3042. ——. *Assoc.with* Copper Pyrites, Cuprite, Bornite, Tenorite, Malachite, Azurite, Zinc-Blende, Hematite, Magnetite, Garnet, Chlorite, and Calcite. *Loc.* Glassford Cr. Copper Mines, Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne Valley line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 150, pp. 5-7 (1900), and 194, p. 28 (1904), and A.R., pp. 309, 310, 319, 320 (1911).

3043. ——. *Assoc.with* Gold, Copper Pyrites, Iron Pyrites, Mispickel, Zinc-Blende, and Calcite, in quartz. *Loc.* Advance Reef, **Norton** (Milton) Goldfield, about 4 miles E. of Wietalaba Rail. Stn. (Boyne Valley line), about 43 miles (by rail and road) S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 21, p. 6 (1885), and 208, p. 11 (1907), and G.S.M.

3044. ——. *Assoc.with* Gold, Silver, Zinc-Blende, and Iron Pyrites, in quartz and calcite. *Loc.* All Nations Reef, Norton (Milton) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 13 (1907).

3045. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Malachite, and Zinc-Blende, in quartz. *Loc.* Brigham Young (Todman's Tapautohaunga) Mine, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, pp. 15, 16 (1907).

3046. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz. *Loc.* Conran's Reef, Norton (Milton) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 8 (1890).

3047. ——. *Assoc.with* Gold, Iron Pyrites, Zinc-Blende, and Calcite, in quartz. *Loc.* Frampton United Mine, Norton (Milton) Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

3047A. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz and calcite. *Loc.* Frampton Reef, Norton Goldfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 208, p. 21 (1907).

3047B. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Friend's Mine, Norton Goldfield (*ante*). *Ref.* G.S.M.

3048. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, and Zinc-Blende, in quartz. *Loc.* Galena Reef, Norton Goldfield (*ante*). *Assay:* Gold = 2 oz. 8 dwt. 9 gr., and Silver = 5 oz. 3 dwt. 13 gr. per ton. *Ref.* G.S.Q. Pubs. 21, p. 8 (1885), and 208, pp. 22-24 (1907).

3049. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Zinc Blende, and Redruthite, in quartz. *Loc.* Goody's (Carmichael's Reef), Norton Goldfield (*ante*). *Assay: See* No. 4277. *Ref.* G.S.Q. Pub. 208, p. 26 (1907).

3050. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Hans Big Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 27 (1907).

3051. ——. *Assoc.with* Gold, Iron Pyrites, Zinc-Blende, in quartz and calcite. *Loc.* Hickey's Reef, Norton Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

3052. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, and Zinc-Blende, in quartz and calcite. *Loc.* Who'd Ha' Thought It Reef, Norton Goldfield (*ante*). *Assay: See* No. 4294. *Ref.* G.S.Q. Pubs. 21, p. 6 (1885) and 208, p. 39 (1907).

3053. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Capricornian Mine, Ulam Goldfield, 3 miles S. of Toonda Rail. Stn., North Coast line, 44 miles (by rail and road) W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 99, p. 6 (1894).

3054. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Just-in-Time Mine, Ulam Goldfield (*ante*). *Assay:* Gold = 1 oz. 9 dwt. 9 gr. per ton. *Ref.* G.S.Q. Pub. 99, p. 11 (1894).

3055. ——. *Assoc.with* Gold, Iron Pyrites, and Copper carbonate, in quartz. *Loc.* Lamona Claim, Busby's Gully, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 9 (1894).

3056. ——. *Assoc.with* Gold, Iron Pyrites, in quartz. *Loc.* Queenslander P.C., Queenslander Cr., Top Camp, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99 p. 4 (1894).

3057. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Seaview Mine, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 6 (1894).

3058. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Victory Mine, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 10 (1894).

3058A. ——. *Assoc.with* Gold, Silver, Zinc-Blende, and Copper Pyrites, in quartz reef in diorite country. *Loc.* Britannia Mine, N. of Lake Learmouth, Canoona Goldfield, 35 miles N.byW. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Assay:* 6 oz. Gold and 4 oz. Silver per ton. *Ref.* B.D.

3059. ——. *Assoc.with* Gold, Zinc-Blende, and Dolomite, in quartz reef. *Loc.* Annie Mine, Cawarral Goldfield, 23 miles (by rail) N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 125, p. 28 (1897), and G.S.M.

3060. ——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* Miners' Dream Mine, Bob's Cr., 4 miles E.N.E. of Bouldercombe, 13 miles S. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 13, p. 16 (1898).

3061. ——. *Assoc.with* Gold, Zinc-Blende, and Copper Pyrites, in quartz. *Loc.* Mary Florence Mine, Blackfellow's Gully, Morinish Goldfield, 30 miles W.N.W. of Rockhampton. *Co.* Livingtone (*ante*). *Ref.* A.R.D.M., p. 60 (1885), and G.S.M.

3062. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Welcome Mine, Morinish Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 47 (1887).

3063. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* "The Pointers," nr. Yaamba, 13 miles N.W.byW. of Rockhampton. *Co.* Livingtone; *Dist.* Port Curtis. *Ref.* Q.M.

3064. ——. *Assoc.with* Anglesite. *Loc.* Carmilla Mine, Carmilla Cr., Connor's Range, 30 miles N. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* Q.M.

3065. ——. *Assoc.with* Gold and Cerussite, in quartz. *Loc.* Magpie Lode, Carmilla Mine, Connor's Range (*ante*). *Ref.* G.S.Q. Pub. 141, p. 5 (1898).

3066. ——. In gossan vein. Limekiln Beach, Hunter Is., 45 miles N.E.byE. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 21 (1894).

3067. ——. *Assoc.with* Gold, Silver, Native Copper, Copper Pyrites, Cuprite, Redruthite, Azurite, Malachite, Iron Pyrites, Molybdenite, and Ironstone in breccia and granite rock. *Loc.* Moonmera Copper Mines, nr. Moonmera Rail. Stn., 20 miles (by rail) S.S.W. of Rockhampton, Mt. Morgan Br. line. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 143, p. 27 (1899), and 195, pp. 18-20 (1904).

3068. ——. *Assoc.with* Copper Pyrites, Tetrahedrite, Malachite, Azurite, Zinc-Blende, Iron Pyrites, and Calcite, in slate, diorite, andesite, syenite, and quartzite. *Loc.* Blue Bell Copper Mine, Amamoor Cr. 19 miles S.S.E. of Gympie. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* Q.G.M.J., vol. 8, pp. 524-526 (1907).

3069. Galena. *Assoc.with* Gold, Silver, Copper Pyrites, Redruthite, Pyrrhotite, Mispickel, and Stibnite. *Loc.* Mariners' Reef, **Black Snake** Goldfield, 10 miles S. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Analyses and Assays of Ore, etc.: See* No. 2318. *Ref.* G.S.Q. Pub. 28, p. 6 (1886).

3070. ——. Mt. Coora, Black Snake Goldfield, 8 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.M.

3071. ——. *Assoc.with* Gold, Silver, Native Copper, and Copper carbonate. *Loc.* Mt. Terrible Lode, Black Snake, 10 miles S. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

3072. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Mispickel, Zinc-Blende, and Schorl, in quartz. *Loc.* Victoria Reef, Black Snake (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

3073. ——. *Assoc.with* Azurite, Malachite, Copper Pyrites, and Mispickel, in granitic lode. *Loc.* Calgoa West Lode, Sel. 1393, Calgoa Cr., nr. Munna Copper Mine, 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

3074. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Chinaman's Cr., Mt. Ubi, W. of Blackall Range, 15 miles W.byS. of Palmwoods Rail. Stn. (North Coast line). *Co.* Lennox (should be March); *Dist.* Wide Bay. *Ref.* G.S.M.

3075. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Zinc-Blende. *Loc.* Mellor and Elworthy's Stn., Imbil, 8 miles from Kandanga, 15 miles S. of Gympie. *Co.* Lennox (*ante*). *Assay:* Gold = 4 dwt., Silver = 39 oz. per ton, Copper = 0·25 per cent. *Ref.* A.R., p. 93 (1907).

3076. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Empress Reef, Jimna (now Yabba) Goldfield, 35 miles S. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 169, p. 15 (1901).

3077. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc-Blende, in quartz and calcite. *Loc.* Rise and Shine Reef, Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 2 (1889).

3078. ——. *Assoc.with* Gold, Iron Pyrites, Tenorite, Copperas, Calamine, and Zinc-Blende, in quartz. *Loc.* Beer and Dawson's Lease, 1 mile E. of Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 8 (1902).

3079. ——. *Assoc.with* Gold and Stibnite, in quartz. *Loc.* Triad Lease, Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 7 (1902).

3080. ——. In quartz. Columbia Reef, **Gympie Goldfield**, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 52, p. 26 (1889).

3081. ——. *Assoc.with* Silver. *Loc.* Fat Hen Cr. Mine, Gympie Goldfield (*ante*). *Estimated Contents:* Lead = 50 per cent.; Silver = 60 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 52 (1897).

3082. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Glanmire Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 16 (1889).

3083. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Gt. Eastern No. 2 Lease (779), Inglewood Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 76, p. 2 (1891).

3084. ——. *Assoc.with* Gold, in calcite and quartz. *Loc.* Gt. Eastern Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 19 (1889).

3085. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* New Dawn Mine, Gympie Goldfield (*ante*).

3086. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Phœnix P.C. Lease (829), Western Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 12 (1894), and G.S.M.

3087. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Phœnix 3 N. Lease (799), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 32 (1884), and 100, p. 14 (1894).

3088. ——. *Assoc.with* Gold and Iron Pyrites, in quartz and calcite. *Loc.* Phœnix 2 S. Lease (512), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 25 (1889).

3089. ——. *Assoc.with* Gold. Iron Pyrites, Siderite, and Zinc-Blende, in quartz, between walls of slate and diorite (?). *Loc.* Enterprise Reef, on br. of Cochrane Cr., 5½ miles N.W. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 52, p. 12 (1889)

3090. ——. *Assoc.with* Gold and Zinc-Blende, in quartz. *Loc.* Exhibition Reef, 6 miles N. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 52, p. 2 (1889).

3091. ——. *Assoc.with* Gold and Iron Pyrites, in crystalline quartz. *Loc.* Veteran Reef, 7 miles N.N.W. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 52, p. 12 (1889).

3092. ——. *Assoc.with* Copper Pyrites and Zinc-Blende. *Loc.* Mt. Widgee, 14 miles W. of Gympie. *Co.* March (*ante*). *Assay:* Gold = trace, Silver = 2 oz. 16 dwt. per ton, Lead = 7·95, Copper = 1·43, Zinc = 6·30 per cent. *Ref.* A.R., 1908, p. 163.

3093. ——. *Assoc.with* Copper Pyrites, in lode. *Loc.* St. Aignan (Misima) Is., Louisiade Archipelago, 379 miles E.byS. of Port Moresby, **Brit. New Guinea.**

—— Reef, Norton Goldfield. *Min.Ref.* Copper Pyrites, *see* 2291; Galena, 3048; Gold, 4276; Iron Pyrites, 5375; Silver, 7523; Zinc-Blende, 8193.

Galmei. *Syn.* Smithsonite, *which see.*

Galtmore, Walsh R., nr. Herberton. *Min.Ref.* Cassiterite, *see* 855.

Gamma Bore. *See under* Artesian Bores. No. 445.

Gap Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Garden Bores. *See under* Artesian Bores. Nos. 324, 419, 420.

—— Cr., 4 miles N. of Fisherton. *Min.Ref.* Cassiterite, *see* 941; Wolfram, 7966.

—— Coal Seam, Waterstown. *Min.Ref.* Coal, *see* 1755.

—— and Mt. Fairbrother Reefs, Mt. Jacob Mine, Bompa Goldfield. *Min.Ref.* Gold, *see* 4248; Iron Pyrites, 5359.

Gardner Bros'. Bore. *See under* Artesian Bores. No. 288.

Gardner's Manganese Workings, nr. Calliope, S. of Gladstone. *Min.Ref.* Ironstone, *see* 5617A; Manganese-dioxide, 6461.

Garibaldi Diggings. *See* Cawarral Goldfield.

Garnet. *Compo.* Varieties depend on certain percentages of silica, alumina, lime, magnesia, iron, etc. *Colour,* red, brown, yellow, white, apple-green, and black. *Lustre,* vitreous to resinous. *H.* =6·5-7·5. Brittle. *Sp.gr.* 3·1-4·3.

VARIETIES: Almandine, Andradite, Colophonite, Melanite, Pyreneite, Pyrope; also unclassified Garnet. *See* below.

ASSOCIATED MINERALS: Commonly found with Copper Pyrites, Iron Pyrites, Zinc-Blende, and Mispickel, also with Cassiterite, Wolfram, Bismuthinite, Manganese, and several secondary minerals. Among non-metallic minerals, Epidote, Wollastonite, and Chert are common associates, but it is also found with Mica, Quartz, Fluorspar, Hornblende, Tourmaline, etc. In alluvial deposits it frequently occurs with Gold, Tin, Sapphire, Zircon, Topaz, Rock Crystal, etc., etc.

ASSOCIATED ROCKS: These include limestone, granite, mica schist, chlorite rock, hornblende rock, epidote rock, etc., etc.

MINERALOGICAL NOTE: Garnet, in many localities, is found as an alteration or contact deposit between granite and limestone, in association with Epidote, Wollastonite, Chert, Magnetite, and Hematite, the two latter often being found as pseudomorphs after Garnet.—G.S.Q. Pub. No. 196 describes its general mode of occurrence under these conditions. As gemstones there is but little demand for Queensland Garnets, but the brownish-red Pyrope found at Lowood (No. 3168) is worthy of attention.

3094. ——. *Assoc.with* Staurolite, in mica schist. *Loc.* Cattle Cr., Corella R., about 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, Pl. I., p. 18 (1908), and G.S.M.

3095. —— as waterworn pebbles. Woolgar Goldfield, 97 miles (by road) N. of Richmond, 404 miles (by rail and road) W.byS. of Townsville. *Co.* Woolgar; *Dist.* Burke. *Ref.* G.S.M.

3096. —— (as decomposed icositetrahedral crystals). *Assoc.with* Magnetite crystals and Bismuth ores. *Loc.* Mt. Hastings Mine, 2 miles S.E. of Mt. Biggenden, 5 miles S.byW. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 173, p. 4 (1902), and G.S.M.

3097. ——. Laura R., trib. of Normanby R., 67 miles (by rail) W. of Cooktown (Cooktown line). *Co.* Banks; *Dist.* **Cook.** *Ref.* L.B. 2, p. 535 (1890).

3098. —— (as waterworn crystals). *Loc.* Mt. Windsor, between Normanby and Mitchell R., 35 miles N.W. of Mt. Spurgeon, 57 miles N.W. of Port Douglas. *Co.* Banks (*ante*). *Ref.* G.S.M.

3099. Garnet. *Assoc.with* Cassiterite and Tourmaline. *Loc.* Bakerville Mine, 5 miles S.W. of Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 42 (1897).

3100. ——. *Assoc.with* Cassiterite and Tourmaline. *Loc.* Baal Gammon Tin Mine, Watsonville, 7 miles E.S.E. of Stannary Hills Rail. Stn., 6 miles W. of Herberton (*ante*), Walsh and Tinaroo Mineral Fields. *Ref.* G.S.M. and G.S.Q. Pub. 119, p. 12 (1897).

3101. ——. *Assoc.with* Cassiterite, in lode deposit. *Loc.* Baker's 4-mile Mine, Watsonville (*ante*). *Ref.* G.S.M.

3102. ——. *Assoc.with* Cassiterite, in chloritic rock. *Loc.* Boulton's Folly Mine, Watsonville (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

3103. ——. *Assoc.with* Cassiterite, Wolfram, and Felspar, in quartz. *Loc.* Dreadnought Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 26 (1883).

3103A. ——. *Assoc.with* Cassiterite, Copper Pyrites, Mispickel, Galena, Wolfram, and Chlorite, in greywacke. *Loc.* King of the Ranges Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 222, pp. 41-50 (1910).

3104. ——. *Assoc.with* Cassiterite and Chlorite. *Loc.* Strüber's Tin Mine, Watsonville (*ante*). *Ref.* G.S.M.

3105. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Calcifer, 133 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

3106. ——. *Assoc.with* Magnetite, as large dodecahedral crystals. *Loc.* Ti-tree Mine, 3½ miles S.E. of Chillagoe, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

3107. ——. Emuford, Emu Cr., 11 miles S.E. of Petford Rail. Stn. (Chillagoe line). Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* O.R.

3108. ——. *Assoc.with* Magnetite. *Loc.* 8 miles from Koorboora Rail. Stn. (Chillagoe line), 116 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* O.R.

3109. —— (as rock masses). *Assoc.with* Magnetite, Hematite, Limestone, Chert, Wollastonite, and Epidote. *Loc.* Mt. Lucy, 4 miles W. of Almaden Rail. Stn. (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 134, p. 16 (1898), and 196, pp. 6-8, 1905).

3110. ——. *Assoc.with* Copper Pyrites, Cuprite, Redruthite, Malachite, Azurite, Chrysocolla, and Fluorspar, in felspathic rock. *Loc.* Dorothy Copper Mine, Opera Cr., 1½ mile S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 2 (1891), and P.R.S.Q., vol. 15, p. 51 (1900).

3111. —— (as rock mass). *Assoc.with* Cerussite. *Loc.* Lady Jane Mine, 1 mile S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

3112. ——. *Assoc.with* Copper Pyrites, Cuprite, Cerussite, Azurite, Malachite, Galena, Minium, Zinc-Blende, and Hematite, in felspathic matrix. *Loc.* Penzance Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 6 (1891), and 134, p. 11 (1898).

3113. ——. Henrietta Cr., Jordan Goldfield, 24 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* O.R.

3114. ——. *Assoc.with* Ruby, Sapphire, Corundum, Zircon, Tourmaline, and Topaz, in alluvial deposits. *Loc.* Jordan Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 157, p. 6 (1901).

3115. ——. *Assoc.with* Gold, Bismutite, Magnetite, Limonite, Manganese-dioxide, and Ruby, in alluvial deposits. *Loc.* Agate Cr., br. of Robertson R., 21 miles S.S.W. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* L.B. 1, p. 940 (1887).

3116. ——. *Assoc.with* Copper Pyrites and Calcite. *Loc.* Malone's Silver Mine, S. of Pikedale Hotel, 11 miles W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs.

3117. ——. *Assoc.with* Diamond, Sapphire (yellow, green, blue, and pink), Spinel, Beryl, Zircon (red), Tourmaline (black), Topaz (white), Cairngorm, Amethyst, Rock Crystal, Cassiterite, and traces of Gold, in alluvial deposits. *Loc.* Hunt's, Quartpot, Sugarloaf, Lode, Arbouin's, Cannon, and Kettle-Swamp Creeks, and Severn R., Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120 (1898), and B.D.

3118. —— (as rock mass). Por. 14v, Spring Cr., Nundubbermere, 13 miles S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* L.C.B.

3119. ——. *Assoc.with* Cassiterite, Cairngorm, Topaz, Sapphire, Zircon, Spinel, Diamond, and Gold, in alluvial deposits. *Loc.* Spring Cr., and its tributaries, Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 32 (1890).

3120. ——. *Assoc.with* Staurolite, in mica schist. *Loc.* Grey Ranges, New South Wales border, South Western Queensland. *Co.* ——; *Dists.* **Gregory South** and **Warrego.** *Ref.* G.S.M.

3121. ——. *Assoc.with* Magnetite. *Loc.* E. of Mt. Garnet, and E. of Herbert R., 11 miles S. of Coolgarra, 9 miles N.N.E. of Mt. Garnet Rail. Stn., Chillagoe line, Walsh and Tinaroo Mineral Field. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* B.D.

3122. —— in rock mass. *Assoc.with* Limestone and Calcite. *Loc.* Newellton (Silver Valley), Dry R., 10 miles S.W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*).

3123. ——. *Assoc.with* Iron Pyrites, Magnetite, Ironstone, Malachite, Graphite, and Calcite. *Loc.* Double-Barrel Cr. (Manton), 27 miles (by rail) S. of Townsville (Gt. Northern line). *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* L.B. 2, pp. 720-729 (1891).

3124. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and Malachite, in calcite lode. *Loc.* Hein's Lode, Limestone Range, W. of Double-Barrel Cr., about 27 miles S.byW. of Townsville. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 77 p. 7 (1891), and G.S.M.

3125. —— (massive). Ben Lomond, Gregory R., 18 miles S.E. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* O.R.

3126. ——. *Assoc.with* Galena, Cerussite, Copper carbonate, Chrysocolla, and Manganese-dioxide, in gossan. *Loc.* Black Star Lease (116), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

3127. ——. *Assoc.with* Lievrite, Manganese-dioxide, and Cerussite. *Loc.* Boomerang Lease 186, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

3128. ——. *Assoc.with* Galena, Cerussite, Malachite, Chrysocolla, and Manganese-dioxide, in kaolin lode. *Loc.* Mt. Hishon Lease (210), Kangaroo Hills Mineral Field (*ante*). *Assay: See* No. 2969. *Ref.* G.S.Q. Pub. 82, p. 6 (1882).

3129. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Manganese-dioxide, Zinc Blende, Smithsonite, Mispickel, Hematite, Ironstone, and Fluorspar, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

3130. ——. *Assoc.with* Copper carbonate, Calcite, and Chlorite. *Loc.* Running R. N. Lease (164), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

3131. ——. *Assoc.with* Topaz and Cassiterite, in alluvial deposits. *Loc.* Running Cr., Star R., 50 miles N.W. of Ravenswood Junction (Gt. Northern line). *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, pp. 60 and 68 (1887), and G.S.M.

3132. ——. *Assoc.with* Zircon and Gold, in alluvial deposits. *Loc.* Branches of Black Waterhole Cr., 2 miles N.byE. of Hazledean, 24 miles S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 164, p. 10 (1901).

3133. ——. *Assoc.with* Hematite, Wolfram, Stilbite (?), and Mica, in alluvial deposits and in lode. *Loc.* Eungella Stn., Broken R., 50 miles W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 39, p. 6 (1887).

3134. ——. *Assoc.with* Gold, Sapphire, Spinel, Zircon, Amethyst, Cairngorm, Chalcedony, Jasper, Rutile, Topaz, Diamond, Magnetite, Ilmenite, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat Cr., Sheep Station Cr., Policeman Cr., Tomahawk Cr., and Central Cr., Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton, Central line. *Cos.* Clermont and Plantagenet: *Dist.* **Leichhardt.** *Refs.* G.S.Q. Pubs. 81 (1892), 125 (1897), and 172 (1902).

3135. ——. *Assoc.with* Gold, Zircon, Magnetite, and Tourmaline, in alluvial deposits below basalt. *Loc.* Basalt Hill Diggings, 3 miles N. of Borilla Rail. Stn., 7 miles W. of Anakie Rail. Stn., Central line. *Co.* Plantagenet; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 172, p. 7 (1902).

3136. Garnet. In Murphy's Cr., 58 miles (by rail) W. of Ipswich. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 120, p. 85 (1898).

3137. —— (red). *Assoc.with* Gold, Ruby, Almandine, Spinel, Sapphire (blue), Topaz (white), and Zircon, in alluvial deposits. *Loc.* Wallace's and Eldridge's Claim, Seven-mile Diggings, 7 miles S.E. of Nanango, 123 miles N.W.byN. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* L.C.B.

3138. ——. *Assoc.with* Gold, Copper Pyrites, and Mispickel, in quartz and calcite. *Loc.* P.A., head of Ithaca Cr., Mt. Cootha, 5 miles W.byS. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* (and *Assay*) G.S.Q. Pub. 98, p. 2 (1894).

3138A. ——. *Assoc.with* Ilmenite. *Loc.* Carney's Cr., Coochin Coochin, 3 miles S. of Dugandan Rail. Stn. (Fassifern line). *Co.* Ward; *Dist.* Moreton.

3139. ——. *Assoc.with* Epidote and Wollastonite. *Loc.* Booreeco Cr., Barmundoo Stn., 30 miles S.W. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.M.

3140. ——. *Assoc.with* Copper Pyrites, Cuprite, Bornite, Tenorite, Malachite, Azurite, Galena, Zinc-Blende, Hematite, Magnetite, Chlorite, and Calcite. *Loc.* Glassford Cr. Copper Mine, Glassford Cr., 20 miles S. of Miriam Vale Rail. Stn., North Coast line. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 150, pp. 5-7 (1900), and 194, p. 28 (1904).

3141. ——. *Assoc.with* Gold, Copper carbonate, Rock Crystal, and Calcite. *Loc.* Mt. Grim, 3½ miles W.S.W. of Mt. Alma Stn., 31 miles W.S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p 24 (1904).

3142. ——. *Assoc.with* Magnetite, Hematite, and Epidote. *Loc.* ½-mile S.S.E. of Targinie Head Stn., 9 miles W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 23 (1904).

3143. ——. As rock formation, nr. limestone and granite. *Loc.* Buggeriegar Copper Mine, between Morinish and Ridgelands, 20 miles from Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* B.D.

3143A. ——. As rock mass. *Assoc.with* Magnetite. *Loc.* Olsen's Caves, nr. Mt. Etna, 15 miles N.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 194, p 14 (1904).

3143B. ——. As rock formation. *Assoc.with* Hematite. *Loc.* Spring Cr. Diggings, 10 miles N.E. of Cania Goldfield. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 31 (1904).

3144. ——. As rock mass. Glen Dee, Dee River, 5 miles E.N.E. of Mt. Morgan. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* B.D.

3145. ——. *Assoc.with* Wollastonite. *Loc.* Gigoomgan Run, 35 miles W.S.W. of Maryborough. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.M.

3146. ——. As rock mass. *Assoc.with* Wollastonite, in altered limestone. *Loc.* Glenbar Head Stn., 20 miles W. of Tiaro Rail. Stn. (Gympie-Maryborough line). *Co.* Lennox (*ante*). *Ref.* L.C.B.

3147. ——. As rock mass. *Assoc.with* Bornite and Wollastonite, in altered limestone. *Loc.* Munna Copper Mine, Por. 167, 17 miles N. of Kilkivan. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 12 (1902).

3148. ——. As rock mass in lode. *Loc.* E. of Campbell's, Yorkey's Goldfield, Running Cr., 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* L.C.B.

3149. ——. *Assoc.with* Actinolite, Epidote, and Hematite, etc. *Loc.* Yorkey's Surprise G.M. Lease, Yorkey's Goldfield (*ante*).

—— **Almandine** (*var.*). *Syn.*, Precious Garnet (in part). *Compo.*, Silicate of alumina and iron. *Colour,* deep red, pale red, brownish red, and nearly black.

3150. —— ——. *Assoc.with* Malachite, Cuprite, Ironstone, and Asbolane. *Loc.* Valley, W. of Mt. Eurie, nr. head of Dugald R., 40 miles N.byW. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

3151. —— ——. *Assoc.with* Cuprite, Malachite, Manganese-dioxide, and Asbolane. *Loc.* Mountain Home Copper Mine, Mt. Norma, Elder Cr., 17 miles S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 15 (1885).

3152. —— —— (crystals). *Loc.* Head of Williams R., 35 miles S.E. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* B.D., G.S.M., and A.R., p. 393 (1912).

3153. —— ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* At the Lower Crossing of Coen (or Kendall's) R., 45 miles (by road) N.N.W. of Port Stewart, 189 miles N.W. of Cooktown. *Co.* Coen; *Dist.* **Cook.**. *Ref.* G.S.M.

3154. —— ——. In alluvial deposits. Nr. Quartz Hill, Almaden-Georgetown Road, 48 miles E.N.E. of Georgetown, Etheridge Goldfield. *Co.* Tate; *Dist.* Cook. *Ref.* B.D.

3155. —— ——. Percy R., 60 miles S. of Georgetown, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* G.S.M.

3155A. —— ——. *Loc.* Grey Ranges, border of N.S.W., S.W. Queensland. *Dists.* Gregory South and Warrego. *Ref.* G.S.M. and A.R., 394 (1912).

—— **Andradite** (*var.*). *Compo.*, Silicate of iron and lime. *Colour*, greenish, yellowish, brownish, black.

3156. —— ——. Head of Dismal Cr., and Alexander R., 20 miles N. of Donaldson, 75 miles N.byW. of Cloncurry. *Co.* Granada; *Dist.* **Burke.** *Ref.* L.C.B.

3157. —— ——. *Assoc.with* Calcite. *Loc.* Don Jon Mine, nr. Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.M. and A.R., p. 393 (1912).

3158. —— ——. *Assoc.with* Actinolite. *Loc.* Mt. Hastings Mine, 2 miles S.E. of Mt. Biggenden, 5 miles S.W. of Degilbo Rail. Stn. *Co.* Cook (*ante*). *Ref.* G.S.M.

3159. —— —— (as crystals). *Assoc.with* Calcite and Fluorspar. *Loc.* Dorothy Mine, Opera Cr., 1½ mile S.E. of Mungana Rail Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd.; *Dist.* **Cook.** *Ref.* B.D.

3159A. —— ——. *Loc.* Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M. and A.R., p. 393 (1912).

3159B. —— ——. *Loc.* Nr. Petford, about 97 miles (by rail) S.W.byW. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M. and A.R., p. 394 (1912).

3160. —— ——. In alluvial deposits. *Loc.* Henrietta Cr., Jordan Goldfield, 22 miles W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.M.

3160A.——. *Assoc.with* Limestone, Epidote, Magnetite, and Amethyst. Don R., nr. Bowen Road. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* B.D.

3161. —— ——. *Assoc.with* Epidote, Wollastonite, and Chert, in granite and limestone. *Loc.* Diglam Cr., Barmundoo, 28 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis.

3161A. —— ——. Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne Valley br. line). *Co.* Clinton (*ante*). *Ref.* G.S.M. and A.R., p. 393 (1912).

—— ——. **Colophonite** (*sub.var.*). *Colour*, brownish, yellowish. Resinous. Coarse, granular.

3162. —— —— ——. *Assoc.with* Calcite. *Loc.* Don Jon Mine, nr. Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.M.

—— ——. **Melanite** (*sub.var.*). *Syn.* Black Garnet (in part). *Colour*, black.

3163. —— —— ——. In alluvial deposits. *Loc.* Henrietta Cr., Jordan Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* **Cook.** *Ref.* G.S.M.

—— ——. **Pyreneite** (*sub.var.*). *Colour*, greyish black.

3164. —— —— ——. Westwood, 31 miles (by rail) S.W. of Rockhampton (Central line). *Co.* Pakington; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 150, p. 14 (1900).

——. **Pyrope** (*var.*). *Syn.* Precious Garnet (in part). *Compo.*, Silicate of alumina and magnesia. *Colour*, deep red to nearly black.

3165.—— ——. Head of William R., 35 miles S.E. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.M.

3166. —— ——. *Assoc.with* Calcite and Epidote. *Loc.* Mt. Havilah, 2¾ miles S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* **Burnett.** *Ref.* B.D.

3167. —— ——. Wyagampinny Mt., Motley Scrub, 7 miles N.byW. of Pittsworth, 43 miles (by rail and road) N.W.byW. of Toowoomba. *Co.* Aubigny; *Dist.* Darling Downs. *Ref.* G.S.M.

3168. —— ——. *Assoc.with* Hornblende and Ilmenite, as inclusions in basaltic dyke. *Loc.* Lowood, 45 miles (by rail) W. of Brisbane. *Co.* Churchill; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 175, p. 12 (1902), and A.R., p. 392 (1912).

3169. —— ——. As small dodecahedral crystals, in granite. *Loc.* Four-Mile Cr., nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.W. of Rockhampton. *Co.* Raglan; *Dist.* **Port Curtis.** *Ref.* B.D.

Garnierite. *Syn.* Noumeite, *which see.*

Garrick Coal Seam, Pelican Cr., Bowen R. Coalfield. *Min.Ref.* Coal, *see* 1652, 1653.

Garry Owen Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Gas Bores. Glenalvon Mineral Oil Co.

Glenalvon Gas Bores (Nos. 1 and 2), nr. Rosewood Rail. Stn. Por. 10, Par. Forbes. *Co.* Churchill; *Dist.* Moreton. *Ref.* Q.G.M.J., July, 1907, p. 372, and April, 1909, p. 203; L.B. 13, p. 355. Originally sunk for water (?), and found gas, but afterwards sunk deeper for oil, but failed to find it.

Mineral Oil Co.'s Bore, and Roma Gas Bores (Nos. 1 and 2). Por. 89, Par. Roma. *Co.* Waldegrave; *Dist.* Maranoa. *Ref.* Q.G.M.J., Jan., 1905, p. 17; Nov. 1908, p. 591; A.R.D.M. (1908), p. 173.

See also, for gas in bores, Artesian Bores (and Notes). Nos. 24, 46, 385, 386, 387, 406, and 439.

Gas Making. Coal required for this purpose is to be found at Burrum, Ipswich, Walloon, Beaudesert, Styx River, etc., references to which are made under Coal. For retorts, firebricks, fireclay, and other fire-resisting purposes, clays of good quality occur in many places in the State, references to which are given under Kaolin and "Fireclay." Earthy hematite and lime, used in gas purifying, are obtainable in quantity, references being made under Hematite, "Ironstone," and Limestone.

Gasworks (Mackay) Sub-artesian Bore. *See under* Artesian Bores. No. 320.

Gatton, W. of Brisbane. *Lat.*, 27° 33′ S.; *Long.*, 152° 19′ E. *Min.Ref.* Olivine, *see* 6928; Strontiano-calcite, 614; Tripolite, 7030.

—— Rail. Stn (30 miles from). *Min.Ref.* Hyalite, *see* 7019.

Gavial Cr. Goldfield, nr. Mt. Usher, 6 miles N.E. of Mt. Morgan, now included in the Mount Morgan Goldfield. DISCOVERY: Gold found in October, 1865. Field deserted in 1866. *Min.Ref.* Gold, *see* 4338; Iron Pyrites, 5406.

Gayndah District Sub-artesian Bore. *See under* Artesian Bores. No. 25.

Gayndah Goldfields and Mining Centres. Mt. Shamrock, Mt. Biggenden, Gebangle, Brovinia, Paradise, Stanton-Harcourt, Chowie Creek, Mount Steadman, *which see.*

Gayndah, 90 miles W. of Maryborough. *Lat.*, 25° 37′ S.; *Long.*, 151° 36′ E. *Min.Ref.* Clay Ironstone, *see* 1594; Gold, 3629; Limonite, 5832; Silver, 7439; Turgite, 7888; Coal, 1599A; 1601A.

RAILWAY BASE for Eidsvold and St. John's Cr. Goldfields, Cardarga Cr. and Dykehead Gold Mines, and Hungry Hill (McKonky Cr.) Antimony Mines.

GEOLOGICAL NOTE: No geological examination has been made of this locality, but casual observations show that the country is made up of altered sedimentary rocks belonging to the Gympie Formation (Permo-Carboniferous), with granite some miles to the west. A coal seam is said to occur at Gayndah in a well, but no information is available concerning the formation in which it occurs.

Gayndah-Mundubbera line (under construction). *Min.Ref.* Limestone, *see* 628A; Turquoise, 7902A.

Gayundah Co. Mitchell Dist. *See map,* Pl. 18.

Gebangle Goldfield (unproclaimed)—

SITUATION: *See maps,* Pls. 4, 5. Three miles up Yarrabil Cr., 12 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Bowen; *Dist.* Burnett.

DISCOVERY: In year 1888.

MINERAL STATISTICS: *Included in* "Other Goldfields."

MINERAL REFERENCES: Copper carbonate, *see* 1878, 1879; Felspar, 2626; Gold, 3575-3581; Iron Pyrites, 4976-4982; Ironstone, 5509; Mispickel, 6648, 6649.

GEOLOGICAL NOTE: The country is made up of slate, shale, and porphyry, in which there are small, low-grade, gold-bearing reefs. Between the porphyry and slate a large mass of volcanic agglomerate exists, also carrying gold in small quantities. *See* G.S.Q. Pub. No. 60 for notes.

—— P.C., Gebangle. *Min.Ref.* Gold, *see* 3576; Iron Pyrites, 4978; Mispickel, 6649.

Geera (Hannay's) Bores. *See under* Artesian Bores. No. 285.

Geike's Sel., Upper Coomera. *Min.Ref.* Iron Pyrites, *see* 5351A; Zinc-Blende, 8178A.

Gem Discoveries. *See under* Discoveries.

—— Fields and Centres. *See under* Opal and Corundum. *See also maps*, Pls. 11, 19, 21, 31.

Gem Import Duties. *See under* Import Duties on Gems.

Gemstones. (*See under* name of Mineral for details)—

- Agate, *var.* of Chalcedony (banded).
- Almandine, *var.* of Garnet (red). *See also* Spinel.
- Andradite, *var.* of Garnet (greenish, yellowish).
- Amethyst, *var.* of Quartz. Oriental Amethyst, *var.* of Corundum.
- Aquamarine, *var.* of Beryl (bluish green). *See also* Oriental Aquamarine.
- Asteria, *var.* of Corundum (six-rayed).
- Barklyite, *var.* of Ruby (opaque ruby).
- Beryl (pale green), *var.*—Aquamarine (bluish green). *See also* Oriental Aquamarine.
- Black Opal, *var.* of Precious Opal (brilliant play of colours).
- Bloodstone, *var.* of Chalcedony (green with red spots).
- Cairngorm, *var.* of Quartz (yellowish).
- Calcite, *var.*—Satinspar (pearly).
- Carnelian, *var.* of Chalcedony (red and yellow).
- Chalcedony, *vars.*—Agate, Bloodstone, Carnelian, Chrysoprase, Onyx, Prase, Sard, Sardonyx.
- Chrysolite, *var.* of Olivine (pale greenish yellow).
- Chrysoberyl. *See* Oriental Chrysoberyl.
- Chrysoprase, *var.* of Chalcedony (apple green).
- Chrysocolla (bluish green), *var.*—Cyanochalcite (azure blue).
- Corundum, *vars.*—Asteria (Star Sapphire), Corundum, Orange Sapphire, Oriental Amethyst, Oriental Aquamarine, Oriental Cat's Eye, Oriental Chrysoberyl, Oriental Moonstone, Oriental Peridot, Oriental Topaz, Pink Sapphire, Ruby, Sapphire (blue), White Sapphire.
- Cyanochalcite, *var.* of Chrysocolla (azure blue).
- Diamond (colourless, pale yellow).
- Epidote (green).
- Garnet, *vars.*—Almandine, Andradite, Pyrope.
- Grass-stone, *var.* of Quartz (sagenitic).
- Gypsum, *var.*—Satinspar (pearly).
- Hornblende, *var.*—Actinolite (bright green).
- Hyacinth, *var.* of Zircon (brownish red).
- Jargoon, *var.* of Zircon (smoky, brown).
- Jasper, *vars.*—Black (Lydianstone or Touchstone), brown, Egyptian, green, red.
- Kyanite (blue).
- Labradorite (grey, usually with internal reflections of blue colour).
- Lapis Lazuli (blue shades).
- Lazulite (azure blue).
- Lydianstone, *var.* of Jasper (velvet black).
- Malachite, botryoidal form (green).
- Morion. *See* Quartz.
- Olivine, *vars.*—Chrysolite (pale canary yellow), Olivine (bright green), Peridot (pale or dark olive green).
- Onyx, *var.* of Chalcedony (black and white).
- Opal, *vars.*—Precious, Black, Common, "Matrix."
- Oriental Amethyst, *var.* of Corundum (purple sapphire).
- Oriental Aquamarine, *var.* of Corundum (bluish green sapphire).
- Oriental Cat's Eye, *var.* of Corundum.
- Oriental Chrysoberyl, *var.* of Corundum (pale yellow sapphire).
- Oriental Moonstone, *var.* of Corundum.
- Oriental Peridot, *var.* of Corundum (olive green sapphire).
- Oriental Topaz, *var.* of Corundum (yellow sapphire).

Gemstones—*continued:*

Peridot, *var.* of Olivine (olive green).
Prase, *var.* of Chalcedony (deep green).
Pyrope, *var.* of Garnet (deep red).
Quartz, *vars.*—Amethyst, Cairngorm, Morion, Rock Crystal, Rose Quartz, Sagenite or Grass-stone.
Rhodonite (pink).
Rhodochrosite (pink).
Rock Crystal, *var.* of Quartz (colourless).
Rose Quartz, *var.* of Quartz (rose).
Rubellite, *var.* of Tourmaline (pink).
Ruby, *var.* of Corundum (red).
Sagenite (Grass-stone), needles of Rutile in Quartz.
Sapphire, *var.* of Corundum (blue, pink, green ,yellow, orange, white, purple).
Sard, *var.* of Chalcedony (red).
Sardonyx, *var.* of Chalcedony (red, white, brown).
Satinspar, *var.* of Gypsum, also Calcite.
Smoky Quartz. *See* Morion and Cairngorm.
Spinel, *vars.*—Spinel Ruby, Spinel Almandine.
Spinel Almandine, *var.* of Spinel (violet).
Spinel Ruby, *var.* of Spinel (red, pink).
Topaz (colourless, pale blue, pale green), sometimes called "White Sapphire" by miners.
Touchstone. *See* Lydianstone. *Var.* of Jasper.
Tourmaline, *var.*—Rubellite.
Turquoise (blue, green).
Zircon, *vars.*—Hyacinth, Jargoon.

Gem Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

—— Reef, Lower Twelve-mile, Croydon Goldfield. *Min.Ref.* Galena, *see* 2711A; Gold, 3554; Iron Pyrites, 4964.

—— Statistics. *See tables and diagram,* Pls. 44, 46, 46A, 56.

General Gordon Mine, Mt. Hogan, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3792.

—— —— ——. Yatton Goldfield. *Min.Ref* Gold, *see* 4174.

—— —— ——. Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Min. Ref.* Cerussite, *see* 1289; Clay, 1575; Copper Pyrites, 2268; Galena, 3013; Iron Pyrites, 5318; Minium, 6633; Zinc-Blende, 8170.

—— Grant Reef, Mt. Davenport, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4045; Iron Pyrites, 5260.

—— —— ——. Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2928; Gold, 4021; Iron Pyrites, 5242.

—— —— and Sunset Reefs, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2930; Gold, 4029; Iron Pyrites, 2230.

—— —— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1082.

—— Map of Queensland. *See map,* Pl. 1.

—— Sarsfield Reef, Palmer Goldfield. *Min.Ref.* Gold, *see* 3672.

General's (W. H.) Sub-artesian Bore. *See under* Artesian Bores. No. 161.

Geographical Maps of Queensland, and districts. *See* Pls. 1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20.

Geological Formations. *See* Pls. 0, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21.

Geological Reports. *See* Geological Survey of Queensland Publications. *See also under* Govt. Ming. Jour., Q., for list of Special Reports, *also under* Supplementary Reports.

Geological Map of Queensland. *See* Pls. 3, 5, 7, 9, 11, 13, 15, 17, 19, 21.

Geological Survey of Queensland—

HEADQUARTERS: Queensland Geological Survey Office and Museum, Queen and George streets, Brisbane.

OFFICER IN CHARGE: B. Dunstan, Government Geologist of Queensland.

See under "Government Geologists of Queensland" for a record of the appointments of Geologists and Assistant Geologists.

DUTIES: The examination of mines and mineral localities; the geological examination of districts; the determination of the value of minerals for prospectors and others; furnishing information bearing on the application of Government assistance to prospecting parties and to mining companies in deep-sinking propositions; making examinations of areas of country proposed to be reserved for mining purposes; the preparation of geological reports and plans for publication, etc.

PUBLICATIONS, 1879-1912. (Obtainable at Geol. Surv. Office, Brisbane, and at Agent-General's Office, 409 Strand, London, W.C.). *See also under* name of author for author's list. *See under* Supplementary Reports *for list of* Reports in Annual Progress Reports.

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(11.) On the Little River Coalfield, near Cooktown. [With a Geological Map.] R.L.J. (F'cap. C.A. Paper. 1882). 6d.

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(14.) First Sketch of a Geological Map of the Hodgkinson Goldfield. R.L.J. 1883. (Out of print.)

(15.) Progress Report of the Government Geologist for the Year 1883. R.L.J., in Annual Report of the Department of Mines for 1883 p. 54. (F'cap. C.A. Paper. 1884). (Out of print).

(16.) On the Hodgkinson Goldfield. [With two Geological Maps and five Plates of Sections.] R.L.J. (F'cap. C.A. Paper. 1884). (Out of print, for reprint see No. 116).

(17.) On the Mount Morgan Gold Deposits. [With Geological Map and Sketch Map.] R.L.J. (F'cap. L.A. Paper.) Reprinted unofficially (Pole, Outridge & Co.), 1893.

(18). On the Gold Deposits of Mount Leyshon. [With a Geological Map.] R.L.J. (F'cap. C.A. Paper. 1885). 3d. (Out of print).

(19.) Progress Report of the Government Geologist for the Year 1884. R.L.J., in Annual Report of the Department of Mines for 1884 p. 50. (F'cap. C.A. Paper. 1885). (Out of print).

Geological Publications—*continued:*

(19*a*.) On the Proposed Deep Bore for Artesian Water in the Western Interior. R.L.J. (L.A. Paper. 1885). (Out of print).

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(31.) Handbook of Queensland Geology. R.L.J. (8vo. Brisbane: Warwick & Sapsford, 1886). [Also issued with Essays prepared for the Colonial and Indian Exhibition, London, 1886.] (Out of print).

(32.) Annual Report of the Government Geologist for the Year 1886. R.L.J., in Annual Report of the Department of Mines for 1886 p. 63. (F'cap. C.A. Paper. 1887). (Out of print).

(33.) Annual Report of the Assistant Government Geologist for the Year 1886. W.H.R., in Annual Report of the Department of Mines for 1886, p. 65. (F'cap. C.A. Paper. 1887). (Out of print).

(34.) Geological Map of the City of Brisbane and its Environs, accompanied by a Report. W.H.R. (F'cap. C.A. Paper. 1887)

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(42.) Annual Progress Report of the Assistant Government Geologist for the Year 1887. W.H.R., in Annual Report of the Department of Mines for 1887, p. 92. (F’cap. C.A. Paper. 1888). (Out of print).

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(156.) On Queensland Mining and Milling Practice. [With Plans and Plates.] J.M.M. (F'cap. C.A. Paper. 1901). 2s. 6d.

(157.) On the Jordan Creek Goldfield. [With Map.] L.C.B. (F'cap. C.A. Paper. 1901). 6d.

(158.) Bulletin No. 13. Additional Notes on the Palæontology of Queensland, Part 2. [With four Plates.] R. Etheridge, junr. (8vo. 1901). 1s. 3d.

(159.) Annual Progress Report for the Year 1900. (F'cap. C.A. Paper. 1901). 6d.

(160.) Bulletin No. 14. Third Report on the Eidsvold Goldfield, with Notes on McKonkey Creek Diggings, and Antimony Lode. W.H.R. (8vo. 1901). 3d.

(161.) Bulletin No. 15. Report on some Mount Morgan Mines. [With three Plates and three Plans.] B.D. (8vo. 1901). 6d.

(162.) Bulletin No. 16. Report on the Geological and Mineral Features of Diglum Creek, Barmundoo, Gladstone District, with remarks on the Paragenesis of some of the Rock-forming Minerals. [With Map.] B.D. (8vo. 1901). 6d.

(163.) On the Hamilton and Coen Goldfields. [With two Maps.] L.C.B. (F'cap. C.A. Paper. 1901). 1s. 9d.

(164.) Bulletin No. 17. Report on the Geological Features of Hazledean, with Notes on the Coal, Limestone, and other Mineral Products of the Mackay District. B.D. (8vo. 1901). 9d.

(165.) On the Cardigan, Queensland, Tin Syndicate Properties, Thompson's Creek, and the Coolgarra Federal Tin Corporation, Limited, Leases, Herberton Mineral District. W.E.C. (F'cap. C.A. Paper. 1901). 3d.

(166.) Fourth Report on the Gympie Goldfield, having special reference to the Inglewood Dyke and the Eastern Leases. [With Map.] W.H.R. (F'cap. C.A. Paper. 1901). 9d.

(167.) On the Kangaroo Hills Mineral Field. [With Map and nine Plates.] W.E.C. (F'cap. C.A. Paper. 1901). 1s. 9d.

(168.) On the Stanton-Harcourt Diggings and the Mount Shamrock Mine. [With two Maps and fifteen Plates.] L.C.B. (F'cap. C.A. Paper. 1901). 2s.

(169.) On some Mines and Mineral Deposits at the Heads of the Brisbane, Burnett, and Mary Rivers. [With five Plates.] C.F.V.J. (F'cap. C.A. Paper. 1901). 1s 3d.

(170.) On the Burrum Coalfield. [With two Maps and three Plates.] (Reprint of No. 24, with corrections and additions). W.H.R. Also later Report on [with three Plates], by L.C.B. (F'cap. C.A. Paper. 1901). 2s. 6d.

(171.) Bulletin No. 18. Notes on Fossil Plants from Duaringa, Ipswich, Dawson River, and Stanwell [with eight Plates]; and on Fossil Woods from the Ipswich Beds, Boggo Road, Brisbane [with three Plates]. John Shirley, B.Sc. (8vo. 1902). 9d.

(172.) On the Sapphire Fields of Anakie. [With two Maps and twelve Plates.] B.D. (F'cap. 1902). 2s. 6d.

(173.) On the Mount Biggenden Gold and Bismuth Mine and Paradise Goldfield. [With two Maps and twelve Plates). L.C.B. (F'cap. C.A. Paper. 1902). 2s.

(174.) On the Coal Beds on Waterpark Creek, near Port Clinton. [With two Maps.] W.E.C. (F'cap. C.A. Paper. 1902). 1s.

(175.) Annual Progress Report for the Year 1901. (F'cap. C.A. Paper. 1902). 6d.

(176.) On the Clermont Goldfield, with a description of Dry Blowers and other Improvements in Alluvial Gold-saving Appliances. [With two Maps, one Plan, and ten Plates.] B.D. (F'cap. C.A. Paper. 1902). 1s. 6d.

Geological Publications—*continued:*

New Series. Vol. 1 *(Octavo).*

(177.) On the Opal-mining Industry and the Distribution of Opal Deposits in Queensland. C.F.V.J. 8vo. 1902. 2s.

(178.) **Index [No. 2]** to Names of Places, Mines, Reefs, etc., occurring in the Geological Survey Reports, from No. 136 to No. 177, inclusive. R.D. 1902. (Free).

(179.) On Yorkey's Goldfield, and the Marodian Gold and Copper Field. [With two Maps and one Plate.] L.C.B. 8vo. 1902. 1s.

(180.) On a Visit to the West Coast of the Cape York Peninsula and some Islands of the Gulf of Carpentaria; also Reports on the Horn Island and Possession Island Goldfields, and the Recent Prospecting of the Cretaceous Coals of the Cook District. [With four Maps and twelve Plates.] C.F.V.J. 8vo. 1902. 2s.

(181.) Additions to the Geology of the Mackay and Bowen Districts. [With one Map and one Plate.] W.E.C. 8vo. 1903. 1s.

(182.) Geological Sketch Map of Queensland, on the scale of 40 miles to an inch. 1902. 1s. (Out of print).

(183.) Recent Mining Developments on the Ravenswood Goldfield. [With one Map and one Plate.] W.E.C. 8vo. 1903. 9d.

(184.) Report on Gold Workings in the Perry Scrub, Burnett District. L.C.B. 8vo. 1903. 6d.

(185.) Young Australian Gold Mine and Commonwealth Bismuth Mine, Degilbo. L.C.B. 8vo. 1903. 6d.

(186.) (i.) Late Discovery of Gold near Pratten, Talgai Goldfield. (ii.) Some Mines on the Talgai Goldfield; and (iii.) Discovery of Gold at Mount Sturt and Freestone Creek, Warwick District. L.C.B. 8vo. 1903. 6d.

(187.) Sketch Map of the Walsh and Tinaroo Mineral Field. Scale, 2 miles to an inch. W.E.C. 1904. 2s.

(188.) Wolfram and Molybdenite Mining in Queensland. W.E.C. 8vo. 1904. 6d.

(189.) Some Manganese Deposits in the Gin Gin, Degilbo, and Warwick Districts. L.C.B. 8vo. 1904. 6d.

(190.) Records No. 1. (i.) Notes on the Testing of Queensland Coal. (ii.) Notes on the Occurrence of Gold Nuggets at the Dee River, near Mount Morgan. (iii.) Phosphate-bearing Rocks in the Rockhampton District. (iv.) The Iron Bonus Commission—Evidence taken in Queensland. (v.) Notes on Asbestos in the Rockhampton District. (vi.) Notes on the Geological History of Keppel Bay. (vii.) Oriental Rubies in the Tate River, near Chillagoe. B. Dunstan. (viii.) On the Occurrence of the Genus *Halysites* in the Palæozoic Rocks of Queensland and its Geological Significance. R. Etheridge, junr. 8vo. 1904. 6d. (Out of print.)

(191.) Notes on Tin, Copper, and Silver Mining in the Stanthorpe District (with thirteen Plates). L.C.B. 8vo. 1904. 1s.

(192.) The Herberton Tinfield (with Map). W.E.C. 8vo. 1904. 9d. (Out of print.)

(193.) Wet Processes of Copper Extraction, with special reference to Queensland Ores. L.C.B. 8vo. 1904 1s.

(194.) Certain Iron Ore, Manganese Ore, and Limestone Deposits in the Central and Southern Districts of Queensland (with twenty-seven Maps and Plans, and sixteen Plates). L.C.B. 8vo. 1904. 2s. 6d. (Out of print.)

(195.) Moonmera (near Mount Morgan): Its Minerals and Copper Mines, and a Study of its Rock Formations (with two Maps and nineteen Plates). B.D. 8vo. 1904. 2s.

(196.) Records No. 2, with other notes (five Plates). (i.) Gold Deposits near Mount Ubi, west of the Blackall Range. (ii.) The Ironstone of Mount Lucy, Chillagoe District. (iii.) Testing Samples for Prospectors. (iv.) Monazite in Queensland. (v.) A Soil Survey for Queensland. (vi.) Boring for Coal near Townsville. (vii.) The Testing of Queensland Coals. (viii.) Mineral Notes: Agate, Little River; Gypsum Twin Crystals, Eukalunda: Tellurides of Gold, Silver, and Lead at Gympie; Calcite Crystals with Pyrites Inclusions, Croydon. B.D. 8vo. 1905. 6d. (Out of print.)

(197). **Index [No. 3]** to Publications Nos. 177 to 196, inclusive, being Vol. 1 of New Series. R.D. 1905. (Free).

Geological Publications—*continued:*

NEW SERIES. VOL. 2 *(Octavo).*

(198.) Gold, Platinum, Tinstone, and Monazite in the Beach Sands on the South Coast, Queensland. With Appendixes on the Beach Sands of New South Wales, and on the Physical Properties, Sources, and Uses of Platinum (with two Plates and three Figures). L.C.B. 8vo. 1905. 6d.

(199.) Preliminary Report on Recent Discovery of Gold at Oaks View, near Rockhampton (with two Plates). L.C.B. 8vo. 1905. 6d.

(200.) The Central Queensland (Dawson-Mackenzie) Coal Measures. Their continuation towards Mackay and Nebo Districts (with Map). B.D. 8vo. 1905. 2s. (Out of print.)

(201.) Black Ridge, Clermont. (i.) Preliminary Report, with Appendices on the State of the Mineral Industry in the Clermont District during 1904 (with four Maps, twelve Figures, and fifteen Plates). (ii.) Supplementary Notes (with seven Figures and six Plates). L.C.B. 8vo. 1906. 1s. 6d.

(202.) Some Croydon Gold Mines (with fourteen Plans and twelve Plates). B.D. 8vo. 1905. 2s. (Out of print.)

(203.) Graphite in Queensland, with special reference to the Mount Bopple Graphite Deposits (with five Plates). B.D. 8vo. 1906. 6d. (Out of print.)

(204.) Second Report on the West Moreton (Ipswich) Coalfield, with special reference to the Bundamba District (with two Maps, one Plate, and eight Figures). W.E.C. 8vo. 1906. (1s. 6d. [Set of Maps are sold separately, price 1s. 6d.]

(205.) Second Report Oaks View Gold Mines, near Rockhampton (with three Plans and two Plates); and Notes on Mines in the Talgai and Thane's Creek Goldfields. L.C.B. 8vo. 1906. 6d.

(206.) Geological Sketch Map of Queensland (showing mineral localities). Scale, 40 miles to an inch. 1906. 1s. (Out of print.)

(207.) Some Mines in the Burnett District, West of Maryborough (with two Plans). B.D. 8vo. 1907. 6d.

(208.) Report on the Norton Goldfield (with one Map and four Plates). L.C.B. 8vo. 1907. 6d.

(209) Some Goldfields on the Cape York Peninsula—(1) The Starcke Goldfield. (2) The Alice River (Philip) Goldfield. (3) The Hamilton Goldfield. (4) The Coen Goldfield. W.E.C. 8vo. 1907. 6d.

(210.) The Annan River Tinfield, Cooktown District (with one Map and fourteen Plates). W.E.C. 8vo. 1907. 6d. (Out of print.)

(211.) The Stanhills Tinfields (near Croydon) (with two Plans and three Photographs). 8vo. B.D. 1907. 6d.

(212.) Some Croydon Gold Mines (Part II.), with special reference to Bennion's Reef and Highland Mary Reef (with ten plates). B.D. 8vo. 1907. 6d.

(213.) Map of the Copper Mining District of Cloncurry. Scale, 6 miles to an inch. L.C.B. 1907. 2s. 6d.

(214). **Index [No. 4]** to Publications Nos. 198-213, inclusive, being Vol. II. of New Series. R.D. 8vo. 1908. (Free).

NEW SERIES. VOL. 3 *(Octavo).*

(215.) Report on the Cloncurry Copper Mining District (Parts I. and II.) (with one Map, one Plate, seventy-six Plans, and thirty-two Figures). L.C.B. 8vo. 1908. 4s. 6d. (Out of print.)

(216.) The Great Fitzroy Copper ond Gold Mine, Mt. Chalmers, Rockhampton District (with fifteen Plates). B.D. 8vo. 1907. 1s. 6d. (Out of print.)

(217.) Geological Sketch Map of Queensland, showing mineral localities. Scale, 40 miles to an inch. Third Edition. Revised to December, 1907. 1s.

(218.) Sketch Map of the Etheridge Goldfield, on scale of 6 miles to an inch. 1908. 1s. 6d. Compiled by W.H.G. (Out of print. *See* No. 230.)

(219.) Second Report on the Etheridge Goldfield (with one Map and seven Plates). W.E.C. 8vo. 1909. 6d.

Geological Publications—*continued:*

(220.) Sketch Map of the Herberton ond Chillagoe Gold and Mineral Fields. Scale, 6 miles to an inch. Compiled by W.H.G. 1909. (Reprinted 1911.) 1s. 6d.

(221.) Report on Gympie Goldfield. B.D. (In preparation.)

(221A.) Topographical Map of Gympie. B.D. 1911. [18 Sheets.] 3d. per sheet.

(221B.) Geological Map of Gympie. B.D. 1912. [18 sheets.] 3d. per sheet.

(222.) Certain Mines and Mineral Fields in North Queensland (*a*) . . . Mesozoic Coalfield, Cook Dist. (*b*) Mercury, Copper, and Coal Mines, Little R. (*c*) Coal at Mt. Mulligan. (*d*) King of the Ranges Tin Mine, Watsonville. (*e*) Sketch Map of part of the Annan River Tin-field. L.C.B. 8vo. 1910. 6d.

(223.) The Starcke Goldfield (with two Maps and thirteen Figures). L.C.B. 8vo. 1909. 6d.

(224.) The Charters Towers Goldfield—Notes on the Main Reefs (with six Plates). W.E.C. 8vo. 1909. 6d.

(225.) The Coal Measures of South-East Moreton (with two Maps and Sections, five Plates, and one Figure). E.O.M. 8vo. 1910. 2s. Map sold separately. 1s. per sheet, or 1s. 6d. per set of two sheets.

(226.) Sketch Map of East-Central Queensland Gold, Mineral, and Coal Fields, between Rockhampton, Gladstone, and the Dawson and Mackenzie Rivers. Scale, 4 miles to 1 inch. Compiled by W.H.G. 1910.

(227.) Index [No. 5] to Publications Nos. 215 to 226, inclusive, being Vol. III. of New Series. (In preparation.)

NEW SERIES. VOL. 4 *(Octavo).*

(228.) Field Notes on the Mount Flora Gold and Mineral Field (with two Maps, three Figures, and four Plates). L.C.B. 8vo. 1910. 6d.

(229.) Some Mineral Fields in the Hinterland of Mackay: (1) Mt. Spencer Gold and Mineral Field. (2) Eungella Goldfield. (3) Coal at Black Rock Creek. [With four Plans, four Plates, and three Figures.] L.C.B. 8vo. 1910. 6d.

(230.) Sketch Map of the Croydon and Etheridge Goldfields on a scale of 6 miles to an inch. Compiled by W.H.G. 1911. 1s. 6d.

(231.) The Lower Palæozoic Corals of Chillagoe and Clermont (Part I.) (with four plates). R. Etheridge, junr. 8vo. 1911. 6d.

(232.) The Burketown Mineral Field (Silver-Lead and Zinc Mines) (with five Maps, twenty-three Plates, and forty Plans). L.C.B. 8vo. 1911 1s.

(233.) Sketch Map of Cape York Peninsula Gold and Mineral Fields. Scale, 6 miles to an inch. Compiled by W.H.G. 1911. 1s. 6d.

(234.) The Oaks and Eastern Portion of the Etheridge Goldfields (with three Maps and twelve Plates). E.O.M. 8vo. 1911. 6d.

(235.) Records No. 3 (with four Plans and two Plates). (i.) Coal on the North Ipswich Coal and Coke Co.'s Property. (ii.) Coal near Dalby. (iii.) Coal near Chinchilla. (iv.) Coal with Glossopteris Flora, near Hughenden. (v.) Carbonaceous Glossopteris-bearing Strata near Pentland. (vi.) Gold on Mt. Emu Plains Station, Hughenden District. (vii.) The Granite Castle Lode, Mt. Emu Plains Station, Hughenden District. (viii.) Prospecting on Cape River Goldfield. (ix.) Gold on Witty's Freehold, Ormeau. x.) The Tin Lodes of Sandy Creek, Charters Towers District. (xi.) Olivines in the Toowoomba Basalt. W.E.C. and E.O.M. 8vo. 1911. 6d.

(236.) Sketch Map of Goldfields in the Vicinity of Charters Towers. Scale, 4 miles to an inch. Compiled by W.H.G. 1911. 1s. 6d.

(237.) Mount Mulligan Coalfield (with one Map, four Sections, and eight Plates). L.C.B. 8vo. 1912. 6d.

(238.) Outside Mines of Charters Towers Goldfield (with one Map and nine Plates). E.O.M. 8vo. 1913. 6d.

(239.) Coal Resources of Queensland. (A general review.) B.D. 8vo. 1913. 6d.

SUPPLEMENTARY (PROGRESS) REPORTS.

See List under separate heading, page 927.

Geologists of Queensland (List of). *See* Government Geologists.

Georgetown—

Situation: *See maps*, Pls. 8, 9, 32. Twenty miles N. of Forsythe R. Stn., and one hundred and sixty miles S.W. of Almaden Rail. Stn. (Chillagoe line). *Co.* Gilbert; *Dist.* Cook. *Lat.*, 18° 19′ S.; *Long.*, 143° 32′ E.

Population: Included in Etheridge Goldfield.

Rainfall: Yearly average between 1902 and 1907 equals 28·64 inches, with 62 wet days.

Mineral Statistics included in Etheridge Goldfield, *which see.*

Mineral References: Cerussite, *see* 1190d; Copper (Ores), 2025; Copper Pyrites, 2148-2150; Galena, 2753a, 2754-2756; Gold, 3724-3734; Iron Pyrites, 5046-5052; Malachite, 6217a: Marcasite, 6501: Massicot, 6525b; Mispickel, 6682; Pyrrhotite, 7154; Tenorite, 7719; Zinc Blende, 8077.

Reefs: Better Luck, Chance, City of Sydney, Gladstone, Havelock, Lady Maria, North Star, Papa, Paxo, Rescue, Spero Meliora, St. George, Telegraph, Young Wexford, Victoria, etc.

Geological Note: The country rocks are coarse-grained porphyritic granite, elvan rock, and schist. The latter rock occurs in bands, and are supposed to indicate a metamorphic origin for the granite. The elvan rock traverses the granite as dykes, and is frequently associated with gold-bearing quartz reefs. *See* G.S.Q. Pub. No. 92, p. 16, for details.

Geological Publications: *See under* Etheridge Goldfield.

Warden: Stationed at Georgetown. Inspector of Mines: Stationed at Croydon.

General Information: Consult *Pugh's Almanac*, *Queensland Post Office Directory*, *Post and Telegraph Guide*. Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Local Newspapers: *Mundic Miner* and *Etheridge Gazette.*

Georgetown and Cumberland (between), Etheridge Goldfield. *Min.Ref.* Felspar, *see* 2632; Mica, 6555.

Georgina Co. Gregory North Dist. *See map*, Pl. 20.

—— Mine, Barmundoo Goldfield. *Min.Ref.* Galena, *see* 3036a; Gold, 4234; Iron Pyrites, 5355; Zinc-Blende, 8180.

Geraghty (T.)—

Geological Survey Publication:

137. Map of the Etheridge Goldfields. Scale, 1 mile to an inch ... 1898

Geraldine Reef, Woodville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3764.

Geraldton (Innisfail)—

Situation: *See maps*, Pls. 8, 9. On the Johnstone River, 4 miles from Gladys Inlet and 130 miles N.W. of Townsville. *Co.* Nares; *Dist.* Cook. *Lat.*, 17° 31′ S.; *Long.*, 146° 02′ E.

Port for Jordan and Russell Goldfields.

Harbourage: The Johnstone River is navigable for 12 miles for vessels drawing 7 ft. at neap tides and 9 ft. 6 in. at springs. Tides vary from 3 ft. to 9 ft., and are very irregular.

Population: About 1,700.

Rainfall: *See under* separate heading.

Mineral References: Beach Sand, *see* No. 287; Magnetic Sand, 5995; Monazite, 6878; Tantalum, 7697.

Geological Notes: The rocks about the town are clay slates, which have a N.N.W. and S.S.E. strike, and are nearly vertical. Basalt outcrops are exposed about 4 miles to the west, and large areas of alluvial deposits have been formed at the junction of the north and south branches of the Johnstone River. At the mouth of the river the beach sands contain monazite. *See* G.S.Q. Pubs. Nos. 97 and 196 for details.

Geological Publications: Report No. 196. *See under* Gov. Surv. Pub. List for title.

Warden: Stationed at Innisfail. Inspector of Mines: Stationed at Charters Towers.

German Miner Reef, Limestone, Palmer Goldfield. *Min.Ref.* Gold, *see* 3674; Mispickel, 6673.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4505.

German's (or Dry) Gully, Gooroomjam Cr., Scrub Paddock Diggings. *Min.Ref.* Gold (alluvial), *see* 3195.

Gertrude Mine, Bower-Bird Goldfield. *Min.Ref.* Gold, *see* 3459.

Gibb (Thomas), A.R.S.M.

On the Cloncurry Copper Field ores. Q.G.M.J., vol. 5, pp. 554-558 (1904). Also as pamphlet. 8vo. Brisb. (Govt. Printer), 1904, p. 15.

On O.K. Copper Mine. Q.G.M.J., vol. 5, p. 562 (1904).

Gibber Cr. Bore. *See under* Artesian Bores. No. 440.

Gibgerah Bore. *See under* Artesian Bores. No. 415.

Giblets Mine, Emu Cr., trib. of Walsh R. *Min.Ref.* Cassiterite, *see* 931.

Gibson's Claim, Agate Down Goldfield. *Min.Ref.* Gold, *see* 3465.

Gidza Cr. Bores. *See under* Artesian Bores. Nos. 161, 186, 255, 337.

Gigoomgan, Par. of (Spring Cr.). *Min.Ref.* Copper, *see* 1866.

Gigoomgan Run, W.S.W. of Maryborough. *Lat.*, 25° 45′ S.; *Long.*, 152° 14′ E. *Min.Ref.* Chrysocolla, *see* 1537; Copper, 1864; Copper oxide, 2056; Copper Pyrites, 2323; Garnet, 3145; Hematite, 4804; Limestone, 695, (fossiliferous) 736; Malachite, 6384; Marble, 602; Nickel (ore), 6908; Olivine, 6932; Orthoclase, 7052; Tetrahedrite, 7780; Wollastonite, 8047. *See also under* Gov. Ming. Jour., Report No. 22.

Gilbert Co. Cook Dist. *See map*, Pl. 8.

Gilbert Goldfield. Now portion of the Etheridge Goldfield. Mineral Statistics included in Etheridge returns.

Geological Note: Slates of undetermined age, "Desert Sandstone," and (?) Tertiary basalt are the prevailing rocks. Reefs occur in the slates associated with elvan dykes, and are gold-bearing, but it is from the alluvial deposits that most of the gold from this field has been obtained. *See* G.S.Q. Pub. No. 92, p. 29, etc., for notes.

Discovery: Gold was discovered on the Gilbert R., in May, 1869, and a "rush" took place immediately afterwards.

—— Reef, Normanby Goldfield. *Min.Ref.* Gold, *see* 3683.

—— River. Rises in the Newcastle Range, 50 miles S.E. of Charleston (Etheridge), flows S.W. for 20 miles, thence N.W. into Gulf of Carpentaria, 40 miles N. of Normanton. Length about 300 miles. Trib. Einasleigh R. (sub-trib.) Etheridge and Copperfield Rivers. *Min.Ref.* Bismuthinite, *see* 370; Bismutite, 397; Diamond, 2573; Gold, 3241, 3242; Pyromorphite, 7144; Rock Crystal, 7188; Sapphire, 2346.

—— Rock. Mt. Perry. *Min.Ref.* Galena, *see* 2718.

Gilberton, 24 miles S.byE. of Charleston, Etheridge Goldfield. *Lat.*, 19° 13′ S.; *Long.*, 143° 36′ E. *Min.Ref.* Copperas, *see* 2336; Galena, 2825-2827; Gold, 3829, 3830; Hematite, 4723; Iron Pyrites, 5102; Limestone, 643; Magnetite, 5997; Malachite, 6246; Silver (native), 7554; Telluride of Gold, 7701-7702.

—— Leaders (Morris and Colley's Claim), Gilberton. *Min.Ref.* Telluride of Gold and Silver, *see* 7702.

Gilded Rose Mine, Bishop's Cr., Cloncurry. *Min.Ref.* Gold, *see* 3452; Hematite, 4669; Iron Pyrites, 4918; Limonite, 5747.

—— —— P.C. Lease (387) and 1 E. Mine, Carron, Croydon Goldfield. *Min.Ref.* Gold, *see* 3478; Iron Pyrites, 4934.

Gilliat Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 242, 306.

Gilmore Stn., head of Bulloo R. *Min.Ref.* Agate, *see* 1383A; Carnelian, 1363B; Chalcedony, 1382A; Rock Crystals, 7198A.

Gin Gin, W. of Bundaberg. *Min.Ref.* Jasper, *see* 5650; Limestone, 694; Psilomelane, 7103; Rhodonite, 7321.

Ginnenbah Bore. *See under* Artesian Bores. No. 237.

Gira Goldfield, British New Guinea. *Min.Ref.* Gold (alluvial), *see* 3424; Osmiridium, 7058.

Girl-I-Left-Behind-Me Mine, Stanton-Harcourt Diggings. *Min.Ref.* Ankerite, *see* 65; Galena, 2726; Gold, 3621; Limonite, 5831; Redruthite, 7276.

Girofla Mine, Mungana (on Chillagoe Rail. line). *Min.Ref.* Barytes, *see* 268; Cerussite, 1206, 1207; Clay, 1569; Cuprite, 2438; Fluorspar, 2664; Galena, 2805; Hematite, 4716; Ironstone, 5530; Limonite, 5843; Malachite, 6236.

Girrah Lease, N. of Tolmies Rail. Stn. *Min.Ref.* Ironstone, *see* 5601.

Gismondite. *Syn.* Gismondine. *Compo.*, Silicate of alumina and lime. A zeolite. *Colour*, usually white. Glassy. *H.* = 4·5. *Sp.gr.* = 2·2.

3170. ——. In basalt. Rosewood Goldfield, 32 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 68 (1887).

Gladstone.

Situation: *See maps*, Pls. 2, 3, 33. By rail, 328 miles N.N.W. of Brisbane. *Co.* Clinton; *Dist.* Port Curtis. *Lat.*, 25° 50′ S.; *Long.*, 151° 15′ E.

Port for the Goldfields of Barmundoo (Tableland), Bompa, Calliope, Canal Cr., Cania-Kroombit, Langmorn, Maxwelton, Monal, Mt. Rainbow, Norton, and Raglan; New Zealand Gully and Mt. Jacob Gold Workings; the Mt. Cannindah and Glassford Cr. Mineral Fields; Bompa Silver-Lead Workings; Many Peaks Copper Workings; Mt. Hector Copper Mine; Manganese Workings at Auckland Point and Mt. Miller; and the Callide Cr. Coal Beds. A railway has now been constructed which connects the Many Peaks and Glassford Creek Copper Mines with Gladstone.

Harbourage: Port Curtis is one of the best harbours in Queensland, being protected from bad weather by Curtis and Facing Islands, and having good anchorage for ships of all sizes. At the Government wharf the depth of water at low tide is 20 ft. Spring tides rise from 10 to 12 ft.

Population: 6,656 (Census 1911).

Rainfall: Yearly average between 1902 and 1907, 14·73 inches, with 67 wet days.

Mineral Statistics (Gladstone and Outlying Fields):

Manganese,	*see tables,*	Pls. 40, 46, 46A.
Silver,	,,	Pls. 37, 46, 46A.
Lead,	,,	Pls. 38, 46, 46A.
Copper,	,,	Pls. 39, 46, 46A.
Limestone,	,,	Pls. 41, 46, 46A.
Ironstone,	,,	Pls. 41, 46, 46A.

Mineral References: Chloropal, 1470; Gold, 4295B; Ironstone, 5616A; Manganese-dioxide, 6458-6460; Prase, 1402; Psilomelane, 7097; Pyrolusite, 7129; Scheelite, 7355.

Geological Note: The country rocks are Devonian slates, quartzites, jasperoids, and schists, intersected by dykes of trachyte, syenite, and diorite. Manganese occurs in many localities, but principally at Mt. Miller and Auckland Point. *See* G.S.Q. Pub. No. 194 for details.

Geological Publications: Report—No. 194 (1904). *See under* Geol. Surv. Pub. List for title.

Warden: Stationed at Gladstone.

Inspector of Mines: Stationed at Rockhampton.

Chamber of Commerce: A. Fisher, Secretary.

General Information: Consult *Pugh's Almanac*; *Queensland Post Office Directory*; *Post and Telegraph Guide*. Official Monthly News, *Queensland Government Mining Journal* (Brisbane). Local Newspaper, *Gladstone Observer*.

Gladstone Co. Kennedy North Dist. *See map*, Pl. 16.

—— Gully, Talgai Goldfield. *Min.Ref.* Gold (alluvial), *see* 3253.

—— Reef, 4 miles N. of Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3667F; Silver, 7447.

—— ——, Talgai Goldfield. *Min.Ref.* Gold, *see* 3857.

—— Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

—— Tin Mine, Mt. Amos, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 792; Mispickel, 6667; Tourmaline, 7830; Wolfram, 7928.

—— —— ——, California Cr. *Min.Ref.* Cassiterite, *see* 927; Chlorite, 1442.

—— —— ——, Eureka Cr. *Min.Ref.* Cassiterite, *see* 848-849; Chalcolite, 1405; Fluorspar, 2658; Pitch-Blende, 7068.

Gladevale Bore. *See under* Artesian Bores. No. 185.

Glanmire P.C. Lease (598); North Lease (579); 1 North Lease (602); 3 and 4 North Lease (331); 5 North Lease (522), Gympie Goldfield. *Min.Ref.* Gold, *see* 4431, 4432, 4433, 4434, 4435, 4436.

—— Reef, Gympie. *Min.Ref.* Galena, *see* 3082; Gold, 4506; Iron Pyrites, 5460.

Glanmire and Monkland South, No. 4 Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4508.

—— —— ——. —— Lease (833), Gympie Goldfield. *Min.Ref.* Gold, *see* 4437. *See also under* Govt. Ming. Jour., Report No. 42.

—— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1083; Wolfram, 8018.

Glanworth Co. Warrego Dist. *See map*, Pl. 18.

Glass Manufacture. Most of the ingredients for the manufacture of glass are of common occurrence, but works have not yet been established for the manufacture of glass from the raw material. Sand of suitable quality exists close to Brisbane, particularly on Bribie, Moreton, and Stradbroke Islands, and on some of the shores about Moreton Bay. Deposits of pure sand occur in many other localities along the coast.

Glassford Creek Mineral Field—

Situation : *See maps*, Pls. 2, 3, 34. Eight miles W.S.W. of Many Peaks Rail. Stn., 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton ; *Dist.* Port Curtis. Centre about *Lat.* 24° 35′ S. ; *Long.* 151° 26′ E.

Discovery : Glassford Cr. Copper Mine was discovered in 1893.

Proclamation of Field : First gazetted, 5th April, 1900. Last, 24th Oct., 1900, as follows :—Commencing at the south-west corner of Grazing Farm 16, portion 8v, and bounded thence by Dawes Range westerly and northerly to the northern watershed of Glassford Creek, by that watershed and the south boundaries of portions 11v and 10v north-easterly to the west corner of Bompa Goldfield, by the south-west boundary of that goldfield south-easterly to the north-west boundary of Grazing Farm 6, portion 1v, by the north-west boundaries of portions 1v, 4v, and 9v south-westerly to the north-west corner of portion 9v, and by the western boundaries of portions 9v and 8v southerly to the point of commencement.

Area : 62,080 acres (97 sq. miles).

Principal Mining Centres : Glassford Cr. and Many Peaks.

Mineral Statistics : Included in Gladstone returns.

Mineral References : Silver, 7517 ; Lead (Anglesite) 62, (Galena) 3042 ; **Copper** (Azurite) 243A, 243B, (Bornite) 435, (Copper, native) 2009, (Copper Pyrites) 2285-2287, (Cuprite) 2472, 2473, (Malachite) 6352-6354, (Tenorite) 7739, (Tile Ore) 2570 ; Zinc-Blende, 8185 ; Iron (Hematite) 4783-4785, (Iron Pyrites) 5364, (Limonite) 5906, 5907, (Magnetite) 6035-6037 ; Limestone, 674, 675. Other Minerals—Actinolite, 4865 ; Calcite, 528, 529 ; Chlorite, 1465 ; Epidote, 2601 ; Garnet, 3140, 3161A.

Geological Note : The country rocks are quartzites, slates, and greywackes, with intrusive masses of granite. Limestone and garnet rock occur in the vicinity of the township in association with lodes of pyritous ore containing copper and iron. *See* G.S.Q. Pubs. Nos. 150 and 194 for details. *See under* Geol. Surv. Pub. List for title.

Geological Publications : Reports—Nos. 150 (1900), 159 (1901), 190 (1904), 194 (1904).

Warden : Stationed at Gladstone.

Inspector of Mines : Stationed at Rockhampton.

Reports : (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour. ; annually in A.R.D.M.

Smelting Works : *See under* Smelting Works in Queensland.

Glassford Cr. Copper Mines (includes the Bompa Syndicate's Copper Mines), Glassford Cr. Mineral Field. *Min.Ref.* Azurite, *see* 243B ; Bornite, 435 ; Calcite, 528, 674 ; Chlorite, 1465 ; Copper Pyrites, 2286 ; Cuprite, 2473 ; Galena, 3042 ; Garnet, 3140 ; Hematite, 4783, 4784 ; Magnetite, 6036 ; Malachite, 6354 ; Tenorite, 7739 ; Zinc Blende, 8185. *Discovery.*—Copper was first found here in 1893, but it was only on 10th Jan., 1899, that the first mineral lease was applied for.

—— —— —— Mine (Blue Bag Shaft). *Min.Ref.* Actinolite, *see* 4865 ; Copper Pyrites, 2285 ; Epidote, 2601 ; Hematite, 4784 ; Magnetite, 6037 ; Malachite, 6353.

Glasshouse Mountains. Between 40 and 46 miles N.byW. of Brisbane, and close to the North Coast Railway Line. *Min.Ref.* Opal (wood), *see* 6988.

Geological Note : The mountains are trachytic masses, and appear to be the necks of old volcanic cones. They are surrounded by sandstones belonging to the Ipswich (Mesozoic) Series. Descriptions of the peaks are given in "The Geology of the Glasshouse Mountains and District," by Dr. H. I. Jensen, in Proc. Linn. Soc., N.S.W., 1903, pt. 4, and "Geology of the Volcanic Area of the East Moreton and Wide Bay Districts," same author, Proc. Linn. Soc., N.S.W., 1906, pt. 1.

Glassy Felspar. *Syn.* Sanidine, *var. of* Orthoclase, *which see.*

Glastonbury Goldfield—

SITUATION: *See map*, Pls. 4, 5. About 7 miles W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. Centre about *Lat.* 26° 9′ S.; *Long.* 152° 33′ E. Discovered in 1886.

PROCLAMATION: First (and only one) gazetted, June 3rd, 1887, as follows:—Commencing on the right bank of Widgee Creek at the north-west corner of portion 12, parish of Widgee, and bounded thence on the south by that portion bearing east, by the west boundary of portion 1121 bearing south, by the south boundary of that portion and a line in continuation bearing east to Glastonbury Creek, by that creek downwards to the southern termination of the east boundary line of portion 924, parish of Brooyar, by the east, the north, and part of the west boundaries of that portion north, west, and south to the north-east corner of cancelled portion 1492, by the north boundary of that portion and a line in continuation west to Widgee Creek, and by that creek upwards to the point of commencement—exclusive of all alienated and selected lands.

AREA: 6,400 acres (10 sq. miles).

MINERAL STATISTICS: *Included in* "Other Goldfields." *See tables*, Pls. 36, 46, 46A; *also diagram*, Pl. 47.

MINERAL REFERENCES: Gold, *see* 4396-4399; Copper (Copper Pyrites), 2324; Manganese (Pyrolusite), 7133.

GEOLOGICAL NOTE: The country is made up of hardened sandstone, more or less ferruginous, with bands of a dark shale containing plumbago. Some distance away from the sedimentary rocks outcrops of granite are exposed. Gold-bearing quartz reefs, well defined, occur in the sandstone, and vary in thickness from a few inches to about 2 ft. *See* G.S.Q. Pub. No. 52 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 52 (1889), 94 (1893). *See under* Geol. Surv. Pub. List for title.

WARDEN AND INSPECTOR OF MINES: Both stationed at Gympie.

Gleeson Is., Brit. New Guinea. *Min.Ref.* Gold (alluvial), *see* 3421A; Magnetite, 6064.

Glen Aplin, 8 miles (by rail) S.S.W. of Stanthorpe. *Min.Ref.* Cassiterite, *see* 1012.

—— Atherton, 12 miles S.W. of Mareeba. *Min.Ref.* Cassiterite, *see* 955; Molybdenite, 6841; Scheelite, 7350; Wolfram, 7975.

—— Dee, Dee River, E.N.E. of Mt. Morgan. *Min.Ref.* Epidote, *see* 2606; Garnet, 3144; Gold (alluvial), 3402; Ironstone, 5628; Limestone, 692. *Note.*—Between 2,000 and 3,000 miners worked alluvial deposits in this locality about 40 years ago. *See Min.Ref.* No. 3446 for list of nuggets recently found.

—— —— (E. of) Dee River. *Min.Ref.* Gold, *see* 4363; Limonite, 5918.

—— Dower Sub-artesian Bores. *See under* Artesian Bores. No. 271.

—— George Sub-artesian Bore. *See under* Artesian Bores. No. 306.

—— Haughton, Upper Dawson, N.W. of Taroom. *Min.Ref.* Epsomite, *see* 2618; Satin Spar, 4636.

Glen Linedale Mines, N. of Coolgarra. *Min.Ref.* Cassiterite, *see* 856 and 857; Wolfram, 7945A.

—— Mowbray, 1½ mile N. of Thornborough, Hodgkinson Goldfield. *Min.Ref.* Coralline Limestone, *see* 718.

—— Road Crossing, Goondiwindi Rail. *Min.Ref.* Opal (common), *see* 6974.

—— Urquhart Bore. *See under* Artesian Bores. No. 306.

Glenalvon Bores. *See under* Artesian Bores. Nos. 381, 386. *See also under* Govt. Mining Jour., Report No. 78.

—— Coal Bore. *See under* Gas Bores.

—— Gas ——. Nr. Rosewood. *See under* Gas Bores. NOTE: Coal seam also found in this bore.

Glenariffe Bore. *See under* Artesian Bores. No. 382.

Glenbar Head Stn., Mt. Ruby (½-mile W.N.W. of). *Min.Ref.* Copper carbonate, *see* 1969; Garnet, 3146; Gold (alluvial) 3410, (reef) 4416A-4417; Gypsum, 4632; Iron Pyrites, 5450; Limestone, 695; Limonite, 5926; Mispickel, 6810; Stibnite, 7654; Wollastonite, 8048; Zinc Blende, 8211.

Glenbervie Bore. *See under* Artesian Bores. No. 307.

Glencairn Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 898; Chalcanthite, 1322; Chlorite, 1437; Fluorspar, 2661; Iron Pyrites, 5063; Wolfram, 7951.

Glencoe Reef, Table-top, Croydon Goldfield. *Min.Ref.* Gold, *see* 3546; Massicot, 6519.

—— ——, 3 miles N. of Georgetown, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3733.

Glendilla Bore. *See under* Artesian Bores. No. 152.

Glendon Run, nr. Burdekin Falls. *Min.Ref.* Opal, *see* 6980A.

Glenelg, 31 miles W.byS. of Stanthorpe. *Lat.*, 28° 25′ S.; *Long.*, 151° 31′ E. *Min.Ref.* Mispickel, *see* 6708.

—— (5 miles N. of), Warwick Road, W.byS. of Stanthorpe. *Min.Ref.* Limestone, *see* 645.

—— Reef, nr. Oakey Cr., W.S.W. of Warwick. *Min.Ref.* Gold, *see* 3833B; Hematite, 4724A; Iron Pyrites, 5108; Limonite, 5853; Manganese-dioxide, 6416.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 406.

Glenesk Colliery, Burrum Coalfield. *Min.Ref.* Coal, *see* 1806B.

Glenferrie P.A. (300), Dobbyn Group, Cloncurry. *Min.Ref.* Calcite, *see* 468; Copper Pyrites, 2107; Ferro-Calcite, 575; Limonite, 5811; Malachite, 6172; Redruthite, 7261.

Glengallan (Par. of) (pors, 36, 73v), W.S.W. of Allora. *Min.Ref.* Coal, *see* 1636, 1636A.

—— Run, 7 miles N. of Warwick. *Lat.*, 28° 4′ S.; *Long.*, 152° 5′ E. *Min.Ref.* Coal, *see* 1636, 1636A.

—— Valley Sub-artesian Bore. *See under* Artesian Bores. No. 434.

Glengarry Reef, Normanby Goldfield. *Min.Ref.* Gold, *see* 4127; Iron Pyrites, 5304; Mispickel, 6763; Siderite, 7413.

—— (Highland Mary) Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3524.

Glengyle Co. Gregory North Dist. *See map*, Pl. 20.

Glenisla Bore. *See under* Artesian Bores. No. 196.

Glenlyon Bore. *See under* Artesian Bores. No. 203.

—— Run, W.S.W. of Stanthorpe. *Min.Ref.* Calcite, *see* 608; Copper Ore, 2034A; Gold, 3842A; Limestone, 646; Magnetite, 6003; Manganese-dioxide, 6419.

Glenmore, 16 miles N.W.byN. of Clermont. *Min.Ref.* Limestone, *see* 658A; Marble, 590.

Glenmore Limestone Quarries. On Fitzroy River, 4 miles above Rockhampton. *Min.Ref.* Limestone, *see* 682A.

Glenore, S. of Normanton. *Lat.*, 170° 50′ S.; *Long.*, 141° 10′ E. *Min.Ref.* Opal (common), *see* 6968.

Glenora Co. Burke Dist. *See map*, Pl. 20.

Glenormiston, 340 miles W. of Longreach (Central line). *Min.Ref.* Hematite, *var.* Reddle, *see* 4814.

—— Lease Bores. *See under* Artesian Bores. No. 275.

Glenrowan Cr., trib. of Gilbert R., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3735; Silver, 7450.

Glenroy Mining Centre, Cloncurry. *Includes* Mt. Remarkable and Hamilton Cr. Group of Copper Mines. *Min.Ref.* Limonite, *see* 5745; Malachite, 6076; Redruthite, 7205.

—— Copper Mine, 7 miles N. of Palmerston. *Min.Ref.* Malachite, *see* 6213.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 273.

Glenullen Bore. *See under* Artesian Bores. No. 314.

Glenusk Bore. *See under* Artesian Bores. No. 127.

Glenyarra Bore. *See under* Artesian Bores. No. 224.

Globe Copper Mine, Wolca, Mt. Perry. *Min.Ref.* Copper Pyrites, *see* 2130; Gold, 3595; Molybdenite, 6818; Silver, 7433.

Glucina. *See* Beryl.

Glucinum. *Syn.* Beryllium, *which see.*

Goana, Miclere, Clermont. *Min.Ref.* Gold (alluvial), *see* 3285.

Gobongo Cr., S.E.byS. of Kilkivan. *Min.Ref.* Copper, *see* 1860; Gold (alluvial), 3194, (reef) 3624; Mercury, 6551.

Godfrey Lode, Kilkivan. *Min.Ref.* Cinnabar, *see* 1554.

Gogango Bore. *See under* Artesian Bores. No. 93.

Gogango Ranges, 4 miles S. of Gogango Rail. Stn. *Min.Ref.* Azurite, *see* 237; Copper Ores, 2041; Malachite, 6370.

Gold (Au.). *Atom.Wt.* 197·2. *Sp.gr.* 19·3 at 15·5° C.

Mineralogical Notes: *Quality of Gold*—The purest gold in Queensland (and also of the world) is that mined at Mt. Morgan, which contains 99·7-8 per cent. of fine gold, and is valued at £4 4s. 8d. per oz. The gold of poorest quality is that occurring in the reefs at Croydon Goldfield, which has an average value of £2 4s. per oz., although some of the gold on this field is alloyed with so much silver that the bullion is worth only 7s. 6d. per oz. *Native Gold Alloys*—The 0·2-3 per cent. of alloyed metal in Mt. Morgan gold is made up of copper and iron, and a minute trace of silver. All other native gold alloys of Queensland, so far recognised, contain only gold and silver. *Associated Metallic Minerals*—Those which are known to contain gold include Native Bismuth, Native Silver, Native Copper, Native Arsenic, Iron Pyrites, Copper Pyrites, Marcasite, Mispickel, Galena, Stibnite, Pyrrhotite, Zinc Blende, Wolfram, Bornite, Bismuthinite, Tetradymite, Jöseite, Hematite, Limonite, Magnetite, Cuprite, Tenorite, Lead Ores, etc., etc. *Mineral Compounds*—Three defined minerals have been recognised, viz.: Altaite, Calaverite, and Hessite, but others exist of doubtful composition. *See under* mineral names for details.

Geological Notes: *Gangues, etc.*—Quartz, Ironstone, Calcite, Felspar, Graphite, Manganese Ores, Slate, Serpentine, Asbestos, Scheelite, Kaolin. *Associated Rocks*—Granite, Syenite, Schist, Diorite, Diabase, Andesite, Dolerite, Serpentine, Quartzite, Conglomerate, Slate, Graphite, Hornblende-rock, etc., etc. *Alluvial Deposits*—Associated minerals include Platinum, Osmiridium, Monazite, Cassiterite, Magnetite, Ilmenite, Tourmaline, Pleonaste, Garnet, Zircon, Topaz, Ruby, Sapphire, Diamond, etc. *Geological Horizons*—Reefs occur in Granite, Schist, Slate, etc., of undetermined age, and in the Permo-Carboniferous System (Middle Gympie Formation). Alluvial deposits range from Upper Permo-Carboniferous (Clermont Coalfield) to Recent. *See* Geological maps, Pls. 3, 5, 7, 9, 11 13, 15, 17, 19, 21.

Geographical Note: The gold-bearing areas are mostly confined to the eastern half of the State. They are contained in a belt of country which is on an average about 100 miles wide, and which extends from Horn Island in Torres Strait to Pikedale south of Warwick, a distance of over 1,300 miles, the whole of the coast line being made up of proclaimed goldfields, mineral fields, coalfields, and tracts of country known to contain minerals of economic value, but not specially reserved for mining purposes. *See maps*, Pls. 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 25, 26.

Discoveries: Gold was first found at Black Snake near Kilkivan, a specimen being unearthed there in 1852. In the following year, 1853, Calliope was discovered, although not worked until 1862. Canoona was opened in 1857, Peak Downs in 1861, Gympie in 1867, Ravenswood in 1868, Etheridge in 1871, Charters Towers in 1872, Palmer in 1873, Mt. Morgan in 1882, and Croydon in 1885. For other discoveries and notes, *see* Discoveries under separate heading.

Statistical Notes:

World's Gold Production, 1851 to 1910	£2,172,006,825
Australia's Production, 1851 to 1910	525,808,844
Queensland's Production, 1860 to 1910	72,100,202
Australia's Percentage of World's Production	24·21 per cent.
Queensland's Percentage of World's Production	3·32 ,, ,,
Queensland's Percentage of Australia's Production	13·71 ,, ,,

World's Production for Year 1910	£97,051,622
Australia's Production for Year 1910	11,593,328
Queensland's Production for Year 1910	1,874,946
Australia's Percentage of World's Production (1910)	11·94 per cent.
Queensland's Percentage of World's Production (1910)	1·93 ,, ,,
Queensland's Percentage of Australia's Production (1910)	16·17 ,, ,,

Greatest Annual Gold Production in Queensland		(1900)	£2,871,579
Second Greatest	ditto	(1903)	2,839,801
Third ,,	ditto	(1899)	2,838,446
Fourth ,,	ditto	(1898)	2,750,348
Fifth ,,	ditto	(1902)	2,720,512

Total Mineral Production of Queensland up to 1912	104,009,087
Total Gold Production of Queensland up to 1912	75,218,494
Proportion of Total Gold to Total Mineral Production	72·30 per cent.
Copper (next in importance)	10·53 ,, ,,
Most Productive Year for all Minerals in Queensland (1906)	£4,198,648
Gold Production (1906)	2,313,465
Proportion of Gold Production to Total Mineral Production, 1906	55·10 per cent.
Charters Towers—Total Gold Value up to 1912	£27,012,253
Mt. Morgan (including Rockhampton)—Total Gold Value up to 1912	17,090,154
Gympie—Total Gold Value up to 1912	11,270,466

Charters Towers—Percentage of Queensland's Total Gold Gold Production	35·92 per cent.
Mt. Morgan (including Rockhampton)—Percentage of Queensland's Total Gold Production	22·72 ,, ,,
Gympie—Percentage of Queensland's Total Gold Production	14·98 ,, ,,

Queensland's Gold Production in Year 1912	347,946 fine oz.
Charters Towers—Gold Production in 1912	96,046 ,, ,,
Mt. Morgan (including Rockhampton)—Gold Production in 1912	143,976 ,, ,,
Gympie—Gold Production in 1912	39,508 ,, ,,
Charters Towers—Percentage of Queensland's Gold Production, 1912	27·60 per cent.
Mt. Morgan (including Rockhampton)—Percentage of Queensland's Gold Production, 1912	41·38 ,, ,,
Gympie—Percentage of Queensland's Gold Production, 1912	11·35 ,, ,,

Quality of Gold.—An attempt was made to estimate the quality of gold obtained from each field, but the data was so fragmentary and unreliable that the attempt had to be abandoned. The trouble in arriving at something definite was in not being able to obtain assay values, most of the returns being based on cash sales to storekeepers and banks.

Statistical Tables and Diagrams:

See Pls. 36 and 47 for Goldfield Returns
See Pls. 45 and 57 for State Annual Value Summary.
See Pls. 46, 46a for District Quantity and Value Summary.

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See Geol. Surv. Pub. List, Gov. Min. Jour. List, and Supplementary Report List for titles and Reports.

GOLD FIELDS AND PRINCIPAL MINING CENTRES: Queensland possesses over 90 distinct goldfields, the great majority of which were proclaimed as such many years ago. There are about half-a-dozen known as Provisional Goldfields, some have recently been amalgamated to form a group of fields, while others have been abandoned and the land utilised for agricultural and other purposes. Total area of proclaimed mineral fields in the State is 78,000 square miles. *See* further references under name of field. Proclaimed fields below are indicated by an asterisk.

*Agate Downs G.F.	16,000 ac. (25 sq. miles)	*See* Pls. 20, 21.
*Alice R. (Philp) G.F.	64,000 ac. (100 sq. miles)	*See* Pls. 8, 9.
Allandale Prov. G.F.	850 ac. (about)	*See* Pls. 16, 17.
*Balcooma G.F.	19,200 ac. (30 sq. miles)	*See* Pls. 16. 17.
*Birmundoo G.F.	161,920 ac. (253 sq. miles)	*See* Pls. 2, 3.
Bartle Frere Diggings (*see* Russell Extended G.F.).		
Bee Ck. Diggings (*see* Eungella G.F.).		
Black Snake G.F. (*see* Kilkivan G.F.).		
Blackfellow's Gully (*see* Morinish G.F.).		
*Bompa G.F.	7,680 ac. (12 sq. miles)	*See* Pls. 2, 3, 34.

Goldfields and Principal Mining Centres—*continued:*

*Boolboonda G.F. (gold and copper)	21,000 ac.	(nr. 33 sq. miles)	*See* Pls. 4, 5.
*Bower Bird G.F.	230,400 ac.	(360 sq. miles)	*See* Pls. 20, 21.
Brovinia Diggings	...		*See* Pls. 4, 5.
*Calliope and Boyne G. Fields	15,360 ac.	(24 sq. miles)	*See* Pls. 2, 3, 34.
*Canal Cr. G.F.	13,960 ac.	(nr. 22 sq. miles)	*See* Pls. 12, 13.
*Cania and Kroombit G.F.	54,720 ac.	(85½ sq. miles)	*See* Pls. 2, 3, 4, 5, 34.
*Canoona G.F.	124,800 ac.	(195 sq. miles)	*See* Pls. 2, 3.
*Cape R. G.F.	197,120 ac.	(308 sq. miles)	*See* Pls. 16, 17.
*Carrington G.F.	3,940 ac.	(6⅛ sq. miles)	*See* Pls. 16, 17.
Castleton (*see* Etheridge G.F.).			
*Cawarral G.F. (and copper)	218,880 ac.	(342 sq. miles)	*See* Pls. 2, 3.
Charleston (copper) (*see* Etheridge G.F.).			
*Charters Towers G.F.	393,600 ac.	(615 sq. miles)	*See* Pls. 16, 17, 28.
*Chillagoe G. and M.F.	6,144,000 ac.	(9,600 sq. miles)	*See* Pls. 8, 9, 22.
*Chowey G.F.	...		*See* Pls. 4, 5.
*Clermont G.F. (and coal)	1,068,160 ac.	(1,689 sq. miles)	*See* Pls. 10, 11, 14, 15.
Clohesy Prov. G.T. (near Mareeba).			
*Cloncurry G.F. and M. Field (copper)	1,302,420 ac.	(2,035⅜ sq. miles)	*See* Pls. 20, 21, 23.
*Coen G.F.	119,680 ac.	(187 sq. miles)	*See* Pls. 8, 9.
*Crocodile Creek G.F. (*see* Mt. Morgan G.F.).			
*Croydon G.F.	2,544,640 ac.	(3,976 sq. miles)	*See* Pls. 8, 9, 20, 21, 26.
Donnybrook (*see* Ravenswood G.F.).			
Duchess G. and M.F., Cloncurry	...		*See* Pls. 20, 21, 23.
Duffer Diggings	...		*See* Pls. 4, 7.
Dykehead Prov. G.F.	...		*See* Pls. 4, 5.
Eastern Boyne Prov. G.F.	...		*See* Pls. 2, 3.
Ebagoolah (*see* Hamilton G.F.).			
*Eidsvold G.F.	7,040 ac.	(11 sq. miles)	*See* Pls. 4, 5, 35.
Eidsvold Ext. G.F.	3,840 ac.	(6 sq. miles)	*See* Pl.s 4, 5, 35.
*Enoggera G.F.	2,600 ac.	($4\frac{1}{10}$ sq. miles)	*See* Pls. 6, 7.
*Etheridge G.F.	7,398,120 ac.	(11,558 sq. miles)	*See* Pls. 8, 9, 32.
*Eungella G.F.	160,222 ac.	(nr. 251 sq. miles)	*See* Pls. 14, 15.
Fig-tree Prov. G.F.	...		*See* Pls. 2, 3, 34.
Forsythe (Charleston) (*see* Etheridge G.F.).			
*Gaeta G.F.	928 ac.	(1½ sq. miles)	*See* Pls. 4, 5.
Gavial Cr. Goldfield (*see* etc., etc., Mt. Morgan G.F.).			
Gebangle G.F. (Gebangle G.M.)	...		*See* Pls. 4, 5.
Georgetown (*see* Etheridge G.F.).			
Gilbert G.F. (*see* Etheridge G.F.).			
*Glastonbury G.F.	6,400 ac.	(10 sq. miles)	*See* Pls. 4, 5.
Gold Top Prov. G.F., Kilkivan G.F.	...		*See* Pls. 4, 5.
Golden Gate (*see* Croydon G.F.).			
Golden Valley (*see* Croydon G.F.).			
*Grasstree G.F.	1,328 ac.	(over 2 sq. miles)	*See* Pls. 14, 15.
*Green Hills G.F.	128,640 ac.	(201 sq. miles)	*See* Pls. 8, 9, 32.
*Gympie G.F.	76,800 ac.	(120 sq. miles)	*See* Pls. 4, 5, 27.
*Hamilton G.F.	528,640 ac.	(826 sq. miles)	*See* Pls. 8, 9.
Happy Valley (*see* Normanby G.F.).			
Hayes Cr. Prov. G.F.	...		*See* Pls. 8, 9.
Herberton G. and M.F.			
Hillsborough (Eight-mile) (see Ravenswood G F.).			
*Hodgkinson G.F.	1,184,000 ac.	(1,850 sq. miles)	*See* Pls. 8, 9, 22.
Homestead Prov. G.F.	..		*See* Pls. 16, 17.
*Horn Is. G.F.	12,800 ac.	(20 sq. miles)	*See* Pls. 8, 9.
*Jimna (Yabba) G.F.	6,400 ac.	(10 sq. miles)	*See* Pls. 4, 5.
*Jordan Cr. G.F.	40,960 ac.	(64 sq. miles)	*See* Pls. 8, 9.
*Kilkivan G. and M.F.—			
(gold, copper, cobalt, mercury)	G.F., 19,200 ac.	(30 sq. miles)	*See* Pls. 4, 5.
(copper, cobalt, mercury)	M.F., 128,000 ac.	(200 sq. miles)	*See* Pls. 4, 5.
Kingsborough (*see* Hodgkinson G.F.).			
*Kroombit-Cania G.F. (*see* Cania).			
*Langmorn G.F.	192,000 ac.	(300 sq. miles)	*See* Pls. 2, 3, 34.
Leichhardt Prov. G.F. (now included in the Cloncurry G. and M.F.)			
*Leyburn G.F.	4,780 ac.	(7½ sq. miles)	*See* Pls. 12, 13.
Limestone (*see* Palmer G.F.).			
Lochinvar Prov. G.F.	...		*See* Pls. 8, 9.
Lucky Downs Diggings	...		*See* Pls. 16, 17.
*Lucky Valley G.F.	16,000 ac.	(25 sq. miles)	*See* Pls. 12, 13.
Macdonald Prov. G.F. (near Stanthorpe).			
*Mareeba G.F.	...		*See* Pls. 8, 9.

Goldfields and Principal Mining Centres—*continued*:

*Marodian G.F.	15,360 ac. (24 sq. miles)	*See* Pls. 4, 5.
Marengo G.F.	...	*See* Pls. 16, 17.
Maytown (*see* Palmer G.F.)		
*Maxwelton G.F.	1,280 ac. (2 sq. miles)	*See* Pls. 2, 3, 34.
Millchester (*see* Charters Towers G.F.).		
*Milton (Norton) G.F.	16,640 ac. (26 sq. miles)	*See* Pls. 2, 3, 34.
Molangool G.F. (*see* Gaeta G.F.).		
*Monal G.F.	66,300 ac. (103½ sq. miles)	*See* Pls. 2, 3, 34.
Moondilla G.F.	...	*See* Pls. 18, 19.
*Morinish G.F.	24,960 ac. (39 sq. miles)	*See* Pls. 2, 3.
*Mt. Britton (Nebo) G.F.	...	*See* Pls. 10, 11, 14, 15.
Mt. Chalmers (gold, copper) (*see* Cawarral G.F.).		
*Mt. Flora G.F. and M.F.	33,920 ac. (53 sq. miles)	*See* Pls. 10, 11.
Mt. Jacob G.F. (*see* Bompa G.F.).		
Mt. Larcombe Prov. G.F.	...	*See* Pls. 2, 3, 34.
*Mt. Morgan G.F. (and copper)	237,600 ac. (371¼ sq. miles)	*See* Pls. 2, 3.
*Mt. Rainbow G.F.	8,960 ac. (14 sq. miles)	*See* Pls. 2, 3, 34.
*Mt. Shamrock G.F.	4,500 ac. (over 7 sq. miles)	*See* Pls. 4, 5.
*Mt. Spencer G.F. and M.F. (silver, copper, lead)	16,640 ac. (26 sq. miles)	*See* Pls. 14, 15.
*Mt. Wyatt G.F.	64,640 ac. (101 sq. miles)	*See* Pls. 14, 15.
*Mulgrave G.F.	256,000 ac. (400 sq. miles)	*See* Pls. 8, 9.
*Nanango G.F.	15,360 ac. (24 sq. miles)	*See* Pls. 4, 5.
Native Bee Diggings (*see* Clermont G.F.).		
*Nebo (Mt. Britton) G.F.	128,640 ac. (201 sq. miles)	*See* Pls. 10, 11, 14, 15.
Newhaven Prov. G.F.	...	*See* Pls. 16, 17.
New Zealand Gully (*see* Cawarral G.F.).		
*Normanby G.F.	128,000 ac. (200 sq. miles)	*See* Pls. 14, 15, 16, 17.
Northcote (*see* Hodgkinson G.F.)		
*Norton (Milton) G.F.	16,640 ac. (26 sq. miles)	*See* Pls. 2, 3, 34.
*Oaks G. and M.F.	396,288 ac. (619⅕ sq. miles)	*See* Pls. 8, 9.
*Palgrave G.F.	3,226 ac. (about 5 sq. miles)	*See* Pls. 12, 13.
*Palmer G.F.	2,208,000 ac. (3,450 sq. miles)	*See* Pls. 8, 9.
*Paradise G.F.	8,320 ac. (13 sq. miles)	*See* Pls. 4, 5.
Pentland (*see* Cape R. G.F.).		
*Perry G.F.	11,200 ac. (17½ sq. miles)	*See* Pls. 4, 5.
*Piccadilly G.F.	3,840 ac. (about 6 sq. miles)	*See* Pls. 16, 17.
*Pikedale G.F.	19,200 ac. (30 sq. miles)	*See* Pls. 12, 13.
Potallah Prov. G.F.	...	*See* Pls. 8, 9.
Raglan G.F. (*see* Langmorn G.F.).		
*Ravenswood G.F. (gold, antimony, bismuth, molybdenite)	1,024,000 ac. (1,600 sq. miles)	*See* Pls. 16, 17, 29.
*Reid's Cr. G.F.	26,000 ac. (25 sq. miles)	*See* Pls. 4, 5.
*Ridgelands G.F.	10,240 ac. (16 sq. miles)	*See* Pls. 2, 3.
*Rocky R. G.F.	114,560 ac. (179 sq. miles)	*See* Pls. 8, 9.
*Rosewood G.F.	17,121 ac. (26¾ sq. miles)	*See* Pls. 2, 3.
*Russell G.F. (*see* Russell Ext. G.F.).		
*Russell Extd. G.F. (Towalla)	92,160 ac. (644 sq. miles)	*See* Pls. 8, 9.
Sandy Creek (*see* Ravenswood G.F.).		
Scrub Paddock Diggings (*see* Seven-mile Prov. G.F.).		
Seven-mile Prov. G.F.	...	*See* Pls. 6, 7.
*Spring's Rush Extd.	...	*See* Pls. 10, 11.
*Stanton-Harcourt G.F.	2,160 ac. (3⅜ sq. miles)	*See* Pls. 4, 5.
*Stanwell G.F. (1 and 2) (and coal)	19,520 ac. (30½ sq. miles)	*See* Pls. 2, 3.
*Starcke G.F.	193,840 ac. (306 sq. miles)	*See* Pls. 8, 9.
*Strathalbyn G.F.	16,000 ac. (12 sq. miles)	*See* Pls. 16, 17.
*St. John's Creek G.F. (and antimony)	1,280 ac. (2 sq. miles)	*See* Pls. 4, 5.
Table-top (*see* Croydon G.F.).		
*Talgai G.F.	49,220 ac. (near 77 sq. miles)	*See* Pls. 12, 13.
Targinnie G.F. (*see* Langmorn G.F.).		
Tate G.F.	...	*See* Pls. 8, 9.
*Tenningering G. and M.F.	22,720 ac. (35½ sq. miles)	*See* Pls. 4, 5.
*Thane's Creek G.F.	11,000 ac. (17⅕ sq. miles)	*See* Pls. 12, 13.
Thornborough (*see* Hodgkinson G.F.).		
Top Camp Diggings (*see* Cloncurry G. and M.F).		
Towalla G.F. (*see* Russell Extd.).		
Trieste (Ravenswood G.F.).		
*Ulam G.F.	28,160 ac. (44 sq. miles)	*See* Pls. 2, 3.
Uncle Sam Prov. G.F.		
Upper Cape (*see* Cape R. G.F.).		
*Windsor Extd. G.F.	5,730 ac. (9 sq. miles)	*See* Pls. 16, 17.
*Woolgar G.F.	727,680 ac. (1,137 sq. miles)	*See* Pls. 20, 21.
*Yabba (Jimna) G.F.	6,400 ac. (10 sq. miles)	*See* Pls. 4, 5.
*Yatton G.F.	31,360 ac. (49 sq. miles)	*See* Pls. 10, 11.
Yorkey's Prov. G.F.	...	*See* Pls. 4, 5.

CRUSHING MILLS (GOLD): (*See* A.R.D.M., 1912, p. 142A, for details.)

Goldfield or Locality.	CRUSHING.			CYANIDING.		
	No. of Mills.	No. of Stamps.	Capacity (Tons per 24 Hours).	No. of Cyanide Plants.	No. of Vats.	Capacity Tons per Week).
Alice River	1	5	10	1	6	60
Allendale	1	5	8	1	5	48
Argentine (Star)	1	6	6	..	..	..
Biggenden	1	8	36*	..	..	..
Big Hill (Talgai)	1	5	10	..	..	..
Boolboonda..	3	12	22	..	..	..
Bouldercombe (Mount Morgan) ..	2	15	35	2	2	75
Bower Bird	1	5	10	..	..	..
Brookville (Ravenswood).. ..	1	10	20	1	5	50
Callide Tableland (Barmundoo) ..	3	13	28	1	11	100
Cania	1	5	10	..	..	..
Canoona	1	3	2	1	3	30
Cawarral	2	20	40	3	9	90
Charters Towers	15	459	1,123	16	180	5,641
Clermont	5	55	148	2	7	80
Coen	3	18	25	2	8	100
Croydon Fields	14	188	413	8	55	1,843
Degilbo	1	10	20	..	..	..
Eidsvold	3	39	70	2	10	295
Etheridge Fields	14	158	325	9	37	1,095
Eungella (Mackay)	1	5	15	..	..	..
Gaeta	1	13	26	..	..	..
Gilded Rose (Cloncurry)	1	10	20	..	..	..
Glastonbury	2	10	20	1	3	24
Grass Hut (Ravenswood).. ..	1	2	4	..	..	..
Grass Tree (Mackay)	1	20	60	..	..	..
Gympie	10	460	1,101	5	30	810
Hamilton (Cooktown)	3	25	60	1	3	100
Happy Valley	1	5	10	..	..	..
Horn Island	1	10	20	..	..	..
Jimna (Yabba)	2	6	14	..	..	..
Jordan Creek (Geraldton) ..	1	10	20	1	2	50
Keelbottom (Ravenswood) ..	1	5	10	..	..	..
Kilkivan	1	10	20	..	..	..
Kingsborough (Chillagoe).. ..	3	30	61	2	8	195
Kirk (Ravenswood)	1	10	22	1	10	90
Lucky Creek	1	5	12	1	2	20
Maxwelton	1	3	8	1	1	8
Monal	2	20	35	1	6	60
Mount Bennett (Langmorn) ..	1	10	25	1	5	50
Mount Leyshon	1	10	20	..	..	..
Mount Melba (Ravenswood) ..	1	10	25	..	..	..
Mount Morgan	1	10	20†	..	..	..
Mount Perry (Tenningering) ..	2	17	40	..	..	..
Mount Rainbow	1	5	24	..	..	..
Mount Shamrock	1	10	20	1	6	96
Mount Success (Ravenswood) ..	1	5	15	..	..	..
Mount Usher	2	10	22	1	2	60
Morinish	1	8	16	..	..	..
Nanango	1	20	40	..	..	..
Normanby	1	10	20	1	2	120
Norton (Milton)	2	14	20	..	..	..
Palmer	6	44	81	..	..	..
Piccadilly (Ravenswood)	1	5	10	..	..	..
Possession Island	1	1	2	..	..	..
Proserpine	1	5	10	1	1	15
Raglan (Langmorn)	2	20	45	1	2	10
Ravenswood	6	66	160	4	18	90
Rochford (Ravenswood)	4	45	92	1	8	50
Running Creek (Marodian) ..	1	5	10	..	..	..
Russell River (Herberton) ..	1	5	10	..	..	..
Soldier's Cap (Cloncurry).. ..	1	10	20	..	..	..
Stanthorpe	1	5	10	1	5	80
Starcke	2	6	17	1	4	150
Targinnie (Langmorn)	3	25	82	1	4	40
Thane's Creek	1	5	12	1	3	20
Thornborough	3	17	34	1	6	150
Trieste (Ravenswood)	1	5	10	..	..	..
Ulam	1	10	20	..	..	..
Walsh River	1	5	8	..	..	..
West Normanby	1	2	8	..	..	..
Woolgar	1	5	6	..	..	..
Totals	162	2,095	4,802	78	469	11,895

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* Includes 8 stamps as equivalent to 2 Huntington Mills.

† Ball Mills (5,000 tons capacity per week) not included. Includes 15 stamps as equivalent to Kroms Rolls, etc.

Gold-lease Rents. *See under* Rents for time of payment. *See* copy of "Mining Act" for fees charged.

Gold (native). *Compo.*, usually alloyed with silver. *Colour and Streak*, gold-yellow, sometimes silver white. *H.* = 2·5-3. *Sp.gr.* = 15·6-19·3.

3171. ——. In alluvial deposits. Fisher's Cr., 12 miles E.byN. of **Cloncurry.** *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

3172. ——. *Assoc.with* Native Bismuth, in alluvial deposits. *Loc.* Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

3172A. ——. In alluvial deposits. Cambridge Cr. Diggings, 15 miles S.W. of Chudleigh Park Stn., about 65 miles N.N.W. of Hughenden Rail. Stn. (Northern line). *Co.* Chudleigh; *Dist.* Burke. *Ref.* E.O.M.

3173. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Black Springs Waterhole, Locket Cr., about 20 miles S.E. of Croydon, Stanhills Tinfield. *Co.* Esmeralda; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, p. 11 (1907).

3174. ——. In alluvial deposits. Mistake Cr., trib. of Gunpowder Cr., about 90 miles N.W.byN. of Cloncurry. *Co.* Kamileroi; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 3 (1895).

3175. ——. In alluvial deposits. Nr. Gorge in Cloncurry R., 20 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 6 (1895).

3176. ——. In alluvial deposits. Bell's Flat, Florence R., 33 miles S.byW. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 104, p. 6 (1895).

3177. ——. In alluvial deposits. Armstrong Gully, **Top Camp Diggings,** Cloncurry R., 24 miles S.byW. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 104, p. 5 (1895).

3178. ——. In alluvial deposits. Chinaman's Flat, Cloncurry R., Top Camp Diggings, 24 miles S.byW. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 10, p 6 (1885), and 104, p. 5 (1895).

3179. ——. *Assoc.with* Native Bismuth and Bismutite, in alluvial deposits. *Loc.* Mary Douglas Hill, Top Camp Diggings (*ante*). *Ref.* G.S.Q. Pub. 10, p. 6 (1885), and 104, p. 5 (1895).

3180. ——. In alluvial deposits. Red Jack Flat, Top Camp Diggings (*ante*). *Ref.* G.S.Q. Pub. 10 (1885).

3181. ——. In alluvial deposits. Sharkey's Flat, Top Camp Diggings (*ante*). *Ref.* G.S.Q. Pub. 10, p. 6 (1885).

3182. ——. In alluvial deposits. Blackfellow's Gully, 2 mile Cr. Diggings, 23 miles S.byW. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 5 (1895).

3183. ——. In alluvial deposits, in "Desert Sandstone." *Loc.* The Springs, 10 miles S.E. of Croydon, Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p 3 (1896).

3184. ——. In alluvial deposits. Head of Copper-mine Cr., Leichhardt R., nr. Mighty Atom Copper Mine, 42 miles N.W.byW. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 304 (1908).

3185. ——. As traces, in alluvial deposits, in granite country. *Loc.* Br. of Dobbyn Cr., Leichhardt R., 70½ miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 10, p. 8 (1885).

3186. ——. In alluvial deposits. Eastern Cr.. trib. of Gunpwoder Cr., Leichhardt R., 87 miles N.W.byW. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 104, p. 3 (1895).

3187. —— (traces). In alluvial deposits. Gunpowder Cr., Leichhardt R. (*ante*). *Co* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 104, p. 3 (1895).

3188. ——. In alluvial deposits. Surprise Cr., Leichhardt R., about 70 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 104, p. 3 (1895).

3189. ——. In alluvial deposits. Butcher's Gully, trib. of Oxley Cr., 25 miles W.byN. of Upper Cape Diggings. *Co.* Wongalee; *Dist.* Burke. *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

3190. ——. In alluvial deposits. Italian Gully, trib. of Oxley Cr. (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

3191. ——. In alluvial deposits. Jackson's Gully, trib. of Oxley Cr. (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

3191A. ——. *Assoc.with* Magnetite, in alluvial deposits. *Loc.* Anderson Bros. R.C., Por. 2, Par. of Cracknell, Upper Flinders, Mt. Emu Plains Stn., 62 miles N.N.E. of Hughenden, and 55 miles N.W.byW. of Pentland Rail. Stn. (Gt. Northern line). *Co.* Wongalee (*ante*). *Ref.* Q.G.M.J., vol. 11, p. 136 (1910).

3192. Gold. In alluvial deposits. In gullies near the divide between Degilbo and Stanton-Harcourt Runs, 63 miles (by rail and road) W.byN. of Maryborough. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 25, p. 4 (1886).

3193. ——. In alluvial deposits. In gullies nr. Stony Cr., Stanton-Harcourt Diggings, Degilbo Run, 11 miles N. of Degilbo Rail. Stn., 69 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 25, p. 4 (1886).

3194. ——. In alluvial deposits. Duffer Rush Cr. Diggings and other workings, Gobango Cr., 16 miles S.E. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* A.R.D.M., p. 64 (1885).

3195. ——. In alluvial deposits. German's or Dry Gully, Gooroomjam Cr., Scrub Paddock Diggings, 23 miles N.N.E. of Nanango, 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy (*ante*). *Ref.* G.S.Q. Pub. 29, p. 2 (1886).

3196. ——. In alluvial deposits. White's or Manaramby Cr., Scrub Paddock Diggings (*ante*). *Ref.* G.S.Q. Pubs. 29, p. 2 (1886), and 169, p. 11 (1901).

3197. ——. In alluvial deposits. Brovinia Cr., br. of Cadarga Cr., 90 miles (by coach) N.N.E. of Chinchilla, 50 miles S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 114, p. 3 (1896).

3198. ——. *Assoc.with* Silver, in alluvial deposits. *Loc.* **St. John's Cr. Goldfield,**, 16 miles S.W. of Eidsvold. *Co.* Wicklow; *Dist.* Burnett. *Assay:* Gold = 3 oz. 15 dwt.; Silver = 2 oz. 18 dwt. per ton. *Ref.* A.R., p. 59 (1906).

3199. ——. In alluvial deposits. Cabbage Tree Cr., br. of Splinter Cr., nr. Mt. Cannindah, 40 miles S.W. of Miriam Vale Stn. (North Coast line), 83 miles (by rail and road) S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 113, p. 5 (1896).

3200. ——. In alluvial deposits. McKonkey's Cr. Diggings, The Springs, between McKonkey's and Hungry Hill Creeks, 16 miles S.E. of Eidsvold. *Co.* Yarrol (*ante*). *Ref.* G.S.Q. Pub. 160, pp. 14, 15 (1901).

3200A.——. In alluvial deposits Antimony Cr., Kitty Gully and Starlight Gully, etc., Munburra, 40 miles N.N.W. of Cooktown, **Starcke Goldfield.** *Co.* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pubs. 209, p. 6 (1907), and 223, p. 16 (1909).

3200B.——. In alluvial deposits. Diggings Cr., Bearaway, Fearaway, McKenzie, and Prospector's Gullies, Old Starcke Workings, 4 miles E. of Munburra, Starcke Goldfield, about 44 miles N.N.W. of Cooktown. *Co.* Banks (*ante*). *Ref.* G.S.Q. Pubs. 209, p. 6 (1907), and 223, p. 16 (1909).

3201. ——. *Assoc.with* Stibnite, in alluvial deposits. *Loc.* Cocoa Cr., trib. of McIvor R., nr. Wilton Rail. Stn. (Cooktown line), 33 miles N.N.W. of Cooktown. *Co.* Banks; *Dist.* Cook. *Yield:* Gold = 4 oz. 14 dwt. per ton. *Ref.* G.S.Q. Pubs. 91, p. 3 (1893), 209, pp. 6, 7 (1907), and 223, pp. 23, 24 (1909).

3202. ——. In alluvial deposits. Head of E. br. of Starcke R., 22 miles N.W. of Cooktown. *Co.* Banks (*ante*). *Ref.* G.S.Q. Pub. 209, p. 6 (1907).

3203. ——. In alluvial deposits. **Tate Goldfield,** about 32 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 49 (1900).

3204. ——. In alluvial deposits. *Loc.* Wandoo Cr., trib. of Muldiva Cr., Walsh R., 10 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

3205. ——. In conglomerate, in alluvial deposits. *Loc.* Limestone, **Palmer Goldfield,** 60 miles S. of Laura Rail. Stn., Cooktown line. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.M.

3206. ——. In alluvial deposits. Catalpa, nr. Maytown, 50 miles S. of Laura Rail. Stn. (Cooktown line), Palmer Goldfield. *Co.* Chelmsford (*ante*) *Ref.* G.S.Q. Pub. 125, p. 19 (1897).

3207. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Granite Cr., 9 miles E. byS. of Maytown, Palmer Goldfield. *Co.* Chelmsford (*ante*).. *Ref* P.R.S.Q., vol. 4, p. 3 (1887).

3208. ——. In alluvial deposits. Chinaman's Gully, Yanky Bill's Gully, Soda and Acid Cr., Old Township Cr., Two-mile Cr., and Llankelly Cr., **Coen Goldfield,**, 45 miles (by road) N.N.W. of Port Stewart, 189 miles N.W. of Cooktown. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 24 (1901).

3209. ——. *Assoc.with* Garnet, *var.* Almandine, in alluvial deposits. Lower Crossing, Coen (or Kendall's) R., Coen Goldfield (*ante*). *Ref.* G.S.M.

3210. ——. *Assoc.with* Ilmenite, in alluvial deposits. *Loc.* Dunwich Gully, 1¼ mile N.E.byE. of Ebagoola, **Hamilton Goldfield.** *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 16 (1901).

3211. ——. In alluvial deposits. Corbett's, Dick's, Dickie's P.C., Four Mile, Good Luck, Gold Mt., Hit or Miss, Jackson's, Looking Glass, Nuggety, Peterson's, Queenslander, Ross' Well, Slaughteryard, Steel's, and Tasmanian Gullies, Hamilton Goldfield, 33 miles W. of Port Stewart, 173 miles N.W.byW. of Cooktown. *Co.* Coen (*ante*). *Ref.* G.S.Q. Pub. 163, pp. 16 and 17 (1901).

3211A.——. In alluvial deposits. Mt. Adler, 7 miles N. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Copperfield; *Dist.* Cook. *Ref.* G.S.Q. Pub. 234, p. 21 (1911).

3212. ——. *Assoc.with* Scheelite in alluvial deposits. *Loc.* Western Cr., 17 miles S.W. from Georgetown, **Etheridge Goldfield.** *Co.* Gilbert; *District* Cook. *Ref.* B.D.

3213. ——In alluvial deposits. Nuggety Gully, **Green Hills Goldfield,** 24 miles S.W.byS. Georgetown. *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 125, p. 21 (1897).

3214. ——. In alluvial deposits. Red Flat, Green Hills Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 24 (1897).

3215. ——. In alluvial deposits. Hodgkinson R., **Hodgkinson Goldfield,** 19 miles (by coach) from Dimbullah Rail. Stn., 92 miles (by rail and road) W. of Cairns. *Co.* Hodgkinson or Dagmar; *Dist.* Cook. *Ref.* G.S.Q. Pub. 15, p. 49 (1884).

3216. ——. In alluvial deposits. 2 miles from Ninian Bay, 13 miles S.S.E. of Cape Melville, 84 miles N.W.byN. of Cooktown. *Co.* Melville; *Dist.* Cook. *Ref.* L.B. 1, p 577 (1884).

3217. ——. In alluvial deposits. **Bartle Frere Diggings,** nr. Cooroo Peak, 11 miles W.byS. of Geraldton. *Co.* Nares; *Dist.* Cook.

3218. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Kingsford Sluicing Claim, Barron River, nr. Cairns. *Co.* Nares (*ante*).

3219. ——*Assoc.with* Sapphire, in alluvial deposit. *Loc.* Jordan Cr., **Jordan Goldfield,** 22 miles W.S.W. of Geraldton. *Co.* Nares (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

3220. ——. In alluvial deposits. Beatrice R., Bola Gully, Douglas Cr., Fairbank's Gully, Golden Gully, Henrietta Cr., Jordan Cr., Joyce's Gully, Lemon's Cr., Little Beatrice R., Macintosh Gully, Nuggety Gully, Poverty Gully, Smith's Gully, and Spring Cr. Jordan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 157, p. 4 (1901).

3220A.——. In alluvial deposits. Creek, foot of Mt. Bartle Frere, Upper Mulgrave, 15 miles W.byN. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* A.R.D.M., p. 33 (1890).

3221. ——. In alluvial deposits. Swiper's Flat, head of Christmas Cr., Mulgrave R., 18½ miles W.N.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 89, p. 4 (1893).

3222. ——. In alluvial deposits. In the Coochee Reach, Russell R., 19 miles W.byN. of Geraldton, **Russell Goldfield.** *Co.* Nares (*ante*). *Ref.* G.S.Q. Pub. 45, p. 3 (1888).

3223. ——. In alluvial deposits. Coojeebah Cr., Russell R., 16 miles W.byN. of Geraldton (*ante*). *Ref.* G.S.Q. Pub. 45, p. 2 (1888).

3224. ——. In alluvial deposits. Cooppooroo Cr., Russell R., 20 miles W.byN. of Geraldton (*ante*). *Ref.* G.S.Q. Pub. 45, p. 3 (1888).

3225. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Tachappa Cr. and brs., Russell R., 13 miles W.N.W. of Geraldton (*ante*). *Ref.* G.S.Q. Pub. 45, p. 2 (1888).

3226. ——. In alluvial deposits. Tinkinchilla Cr., Russell R., 15 miles W.N.W. of Geraldton (*ante*). *Ref.* G.S.Q. Pub. 45, p. 2 (1888).

3227. ——. In alluvial deposits. Wairamba Cr., Russell R., about 21 miles W.byN. of Geraldton (*ante*). *Ref.* G.S.Q. Pub. 45, p. 3 (1888).

3227A.——. In alluvial deposits. Burn's and Party's Mine, Russell R. Terraces, 22 miles W.N.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 45, p. 3 (1888).

3228. ——. In alluvial deposits. Butler and McDonald's Claim, Russell R. Terraces (*ante*). *Ref.* G.S.Q. Pub. 45, p. 3 (1888).

3229. ——. *Assoc.with* Platinum, in alluvial deposits. *Loc.* Clarke and Joss's Claim, Russell R. Terraces (*ante*). *Ref.* G.S.Q. Pub. 45, p. 2 (1888).

3230. ——. *Assoc.with* Cassiterite and Ironstone, in alluvial deposits. *Loc.* Russell R. Terraces (*ante*). *Ref.* G.S.Q. Pubs. 45, pp. 3, 4 (1888), and 89 (1893).

3231. ——. *Assoc.with* Sapphire, in alluvial deposits. *Loc.* Russell Goldfield, 15 to 20 miles W.N.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 81, p. 2 (1892).

3232. Gold. In alluvial deposits. Stony Cr., nr. Cairns. *Co.* Nares (*ante*). *Ref.* G.S.Q. Pub. 125, p. 20 (1897).

3233. ——. In alluvial deposits. Combo Cr., **Towalla Goldfield,** 18 miles W.byS. of Geraldton. *Co.* Nares (*ante*). *Ref.* G.S.Q. Pub. 97, p. 2 (1894).

3234. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Tinaroo Cr., 6 miles N.N.E. of Tolga Rail. Stn. (Atherton line), Walsh and Tinaroo Mineral Fields. *Co.* Nares (*ante*). *Refs.* G.S.Q. Pub. 125, p. 21 (1897), and P.R.S.Q., vol. 15, p. 49 (1900).

3235. ——. In alluvial deposits. Upper Mulgrave, 9 miles S.S.W. of Mulgrave Rail. Stn. (Cairns-Mulgrave tramway), 25 miles N.W.byN. of Geraldton. *Co.* Nares (*ante*). *Ref.* G.S.Q. Pub. 125, p. 20 (1897).

3235A.——. In alluvial deposits. Christmas Hill, 14 miles E.S.E. of Percyville, **Etheridge Goldfield.** *Co.* Percy; *Dist.* Cook. *Ref.* G.S.Q. Pub. 234, pp. 20, 21 (1911).

3236. ——. In alluvial deposits. Mountain Maid Cr., Percy R., trib. of Gilbert R., 60 miles S. of Georgetown, Etheridge Goldfield. *Co.* Percy (*ante*). *Ref.* G.S.Q. Pub. 58, p. 13 (1890).

3237. ——. In alluvial deposits. Oaks Gold and Mineral Field, 30 miles (by road) S.byE. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy (*ante*). *Ref.* A.R.D.M., p. 57 (1907).

3237A.——. In alluvial deposits. Old Oaks Diggings, 25 miles S.S.W. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy (*ante*). *Ref.* G.S.Q. Pub. 234, p. 20 (1911).

3237B.——. In alluvial deposits. Yarraman Cr., about 18 miles S.S.W. of Oak Park Stn., about 66 miles S. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy (*ante*). *Ref.* E.O.M.

3238. ——. In alluvial deposits. Rocky R. Goldfield, 26 miles N.E. of Coen, 71 miles N.N.W. of Port Stewart, 215 miles N.W. of Cooktown. *Co.* Sidmouth; *Dist.* Cook.

3239. ——. In alluvial deposits. Spring Cr., Smyth's Cr., and in Reconstruction Claim, **Horn Island Goldfield,** 3 miles S.E. of Thursday Is., Torres Strait. *Co.* Torres; *Dist.* Cook. *Ref.* G.S.Q. Pub. 112, pp. 2, 5 (1896).

3240. ——. *Assoc.with* Ruby, Garnet, Bismutite, Limonite, Manganese-dioxide, and Magnetite, in alluvial deposits. *Loc.* Agate Cr., 21 miles S.S.W. of Charleston Rail. Stn., **Etheridge Goldfield.** *Co.* Victor; *Dist.* Cook. *Ref.* L.B. 1, p. 940 (1887).

3241. ——. *Assoc.with* Sapphire, in alluvial deposits. *Loc.* Gilbert R., about 50 miles S.E. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 20 (1897).

3242. ——. *Assoc.with* Diamond, in alluvial deposits. *Loc.* Gilbert R. (*ante*). *Ref.* B.D.

3243. ——. In alluvial deposits. Robertson R., 21 miles S. of Charleston, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 24 (1897).

3243A. ——. In alluvial deposits. "Baird Rush" or Bairdville, about 52 miles N. of Coen. *Co.* Weymouth; *Dist.* Cook. *Ref.* Q.G.M.J., p. 603 (1910).

3243B.——. In alluvial deposits. Lockhart R., about 10 miles N.N.W. of **Hayes's Prov. Goldfield.** *Co.* Weymouth (*ante*). *Ref.* Q.G.M.J., p. 601 (1910).

3243C.——. In alluvial deposits. Batavia R., 7 miles N. of Bairdville, 58 miles N. of Coen. *Co.* Weymouth (*ante*). *Ref.* Q.G.M.J., vol. 12, p. 307 (1911).

3244. ——. In alluvial deposits. Macintyre Brook, opposite Sandy Cr., 33 miles W.S.W. of Warwick. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 87, p. 9 (1892).

3245. ——. In alluvial deposits. In watercourses heading from range between Macintyre Brook and Condamine R., about 28 miles W.S.W. of Warwick. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 40, p. 2 (1887).

3246. ——. In alluvial deposits. **Pikedale Goldfield,** 18 to 20 miles N.W.byN. of Stanthorpe. *Co.* Bentinck (*ante*). *Refs.* P.R.S.Q., vol. 4, p. 20 (1887), and G.S.Q. Pub. 105, p. 9 (1895).

3247. ——. *Assoc.with* Cassiterite, Stannite, Sapphire, Diamond, Topaz, Zircon, and Amethyst, in alluvial deposits. *Loc.* Broadwater Cr. and its tributaries, **Stanthorpe Mineral Field,** 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 31 (1898).

3248. ——. *Assoc.with* Cassiterite, Diamond, Sapphire, Topaz, Zircon, Spinel, Garnet, and Cairngorm, in alluvial deposits. *Loc.* Spring Cr. and its tributaries, 2¾ miles W. of Stanthorpe, Stanthorpe Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 120, p. 32 (1890).

3249. ——. (traces). *Assoc.with* Stibnite and Cassiterite, in alluvial deposits. *Loc.* Head of Thirteen-mile Cr., trib. of Pike Cr., 10 miles W.N.W. of Stanthorpe, Stanthorpe Mineral Field (*ante*). *Ref.* B.D.

3250. ——. In alluvial deposits. Camp Hill Range, head of Canal Cr., 28 miles W.byS. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 40, p. 2 (1887), and 120, pp. 71, 72 (1898).

3251. ——. In alluvial deposits. **Lucky Valley Goldfield,** 10 miles S.E. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 48, p. 41 (1888).

3252. ——. In alluvial deposits. Dun's Gully, **Talgai Goldfield,** 3 miles W. of Pratten, 21 miles W.N.W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 120, p. 55 (1898).

3253. ——. In alluvial deposits. Big Hill Gully, Darkey's Flat, Friday Gully, Gladstone Gully, Gum-tree Flat, Louisa, Maccabie's Sawpit, and Spring Gullies, Talgai Goldfield, 3 miles W. of Pratten, 21 miles W.N.W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pubs. 94, p. 5 (1893), and 120, p. 55 (1898).

3254. ——. In alluvial deposits. Dunn's Gully, Talgai Goldfield ((*ante*). *Ref.* G.S.Q. Pub. 40, p. 3 (1887).

3255. ——. *Assoc.with* Cassiterite, Ilmenite, Wolfram, and Topaz, in alluvial deposits. *Loc.* Deep Lead, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns-Herberton line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 115, pp. 1-15 (1896), and P.R.S.Q., vol. 15, p. 49 (1900).

3256. —— *Assoc.with* Corundum, in alluvial deposits. *Loc.* Tully R., 42 miles S. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

3256A.——. In alluvial deposits. *Loc.* Broken River, 3 miles above Dosey Creek, 108 miles W.N.W. of Charters Towers. *Cos.* Clarke and Philp; *Dist.* Kennedy North.

3257. ——. In alluvial deposits. Cornish Jim's Gully, 3 miles N.byE. of Mt. Leyshon, 19 miles S. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 18, p. 2 (1885).

3258. ——. In alluvial deposits. Greasy Bill's Gully, 3½ miles N.N.E. of Mt. Leyshon (*ante*). *Ref.* G.S.Q. Pub. 18, p. 2 (1885).

3259. ——. In alluvial deposits. Gully ½-mile N. of Arthur's Cr., Far Fanning, 28 miles (by road) N.W. of Ravenswood Junction. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 133, p. 9 (1898).

3260. ——. In alluvial deposits. Head of Camoomilli Cr., Magnetic Is., Cleveland Bay, 5½ miles N. of Townsville. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 75, p. 7 (1892).

3261. ——. In alluvial deposits. Watercourses at Mt. Success, 15 miles W.N.W. of Ravenswood Junction. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pubs. 123, p. 9 (1897), and 125, p. 20 (1897).

3262. ——. In alluvial deposits. Connolly Cr., trib. of Burdekin R., **Ravenswood Goldfield,** 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.*. Kennedy North.

3263. ——. In alluvial deposits. Elphinstone Cr., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 11 (1900).

3264. ——. In alluvial deposits. Jessop's and Buchannan's Gullies, trib. of Elphinstone Cr., ½-mile S.S.W. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 11 (1900).

3265. ——. In alluvial deposits. Chinaman's Gully, Gahn's Flat, Milkonan's Point, Red Hill, between Rocky and Sandy Crs., and on the S. side of Sandy Cr., Lower Cape, Capeville, **Cape R. Goldfield,** 62 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, pp. 6, 7 (1891).

3266. ——. In alluvial deposits. White Hill Lead. Lower Cape (Capeville) (*ante*). *Ref.* G.S.Q. Pub. 73, p. 6 (1891).

3267. ——. In alluvial deposits, in gullies of quartzite. *Loc.* W. of Mt. Black, 9 miles W. of Upper Cape, 26 miles W.byN. of Cape R. Rail. Stn., Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

3268. ——. In alluvial deposits. In watercourses, Mt. Davenport, 4 miles N.W. of Cape R. Rail. Stn. (Gt. Northern line), 70 miles (by rail and road) S.W.byW. of Townsville, Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 2 (1891).

3269. ——. In alluvial deposits. In flat nr. Mt. Davenport (*ante*). *Ref.* G.S.Q. Pub. 73, p. 2 (1891).

3270. Gold. In alluvial deposits. Escort or Stone Cr., Golden, Graveyard, Green's, Long, Moran's Nuggety, Paddy's, Quartzite, Sharper's Specimen, and other gullies, Mt. Remarkable, 6 miles W.byN. of Pentland Rail. Stn., Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 4 (1891).

3271. ——. In alluvial deposits. In gully on range, 5 miles up Ready Cr., opposite Mt. Richardson, 18 miles W.byN. of Cape R. Rail. Stn., Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

3272. ——. In alluvial deposits. Deep Lead, Pentland, 3 miles N.W.byN. of Pentland Rail. Stn., Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 96 (1894), and 125, p. 20 (1897).

3272A.——. In alluvial deposits. Bluff Lead, Canton Lead, and Pothole Lead, Upper Cape Diggings, 17 miles W.byN. of Cape R. Rail. Stn. (Gt. Northern line), 77 miles (by rail and road) of Charters Towers, Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 8 (1891).

3273. ——. In alluvial deposits. In gully nr. Old Homestead Reef, 46 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 12 (1891).

3273A.——. In alluvial deposits. Head of the Don R., about 39 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* Q.G.M.J., vol. 5, pp. 610, 611 (1904).

3273B.——. In alluvial deposits. Manton's Cr., trib. of Don R., about 39 miles S. of Bowen (*ante*). *Ref.* Q.G.M.J., vol. 5, pp. 610, 611 (1904).

3273C.——. *Assoc.with* Chalcedony, Jasper, Lydianstone, Zircon, and Sapphire, in alluvial deposits. *Loc.* 14v, Bunerba, ½-mile S. of Don R., about 39 miles S. of Bowen (*ante*). *Ref.* Q.G.M.J., vol. 5, pp. 610, 611 (1904).

3274. ——. In alluvial deposits. Gullies at the head of Bee Cr., Broken R., 60 miles W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

3275. ——. *Assoc.with* Garnet and Zircon, in alluvial deposits. *Loc.* Branches of Black Waterhole Cr., 2 miles N.byE. of Hazledean, 24 miles S.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 164, p. 10 (1901).

3276. ——. *Assoc.with* a recent ironstone formation. *Loc.* **Normanby Goldfield,** 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pubs. 5, p. 10 (1879), and 88, p. 1 (1893).

3277. ——. *Assoc.with* Iron Pyrites, in alluvial deposits. *Loc.* Otto's Claim, McMaster's (Top Camp), 14 miles N.W.byN. of Clermont, **Clermont Goldfield.** *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 201, p. 64 (1906).

3278. ——. *Assoc.with* Ironstone, Psilomelane, Marcasite, and Epsomite, in alluvial deposits. *Loc.* Paterson's Claim, McMaster's (Top Camp) (*ante*).

3279. ——. *Assoc.with* Magnesite, in alluvial deposits. *Loc.* Head of Prospectors' Gully, McMaster's (Top Camp) (*ante*). *Ref.* G.S.Q. Pubs. 27, p. 2 (1886), and 201, p. 61 (1906).

3280. ——. In alluvial deposits. Schuffler's Dam, ½-mile W.S.W. of McMaster's (Top Camp) (*ante*). *Ref.* G.S.Q. Pub. 201, p. 64 (1906).

3281. ——. *Assoc.with* Magnesite, in alluvial deposits. *Loc.* Yankee Camp, ¾-mile S.E. of McMaster's (Top Camp) (*ante*). *Ref.* G.S.Q. Pub. 201, p. 65 (1906).

3282. ——. In alluvial deposits. Boulder Hill, Middle Camp, Miclere, 20 miles N.byW. of Clermont. *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 201, p. 67 (1906).

3283. ——. In alluvial deposits. Bootlace, Mill's Cr., Miclere (*ante*). *Ref.* G.S.Q. Pub. 201, p. 71 (1906).

3284. ——. In alluvial deposits. Boulder Gully, Mill's Cr., Miclere (*ante*). *Ref.* G.S.Q. Pub. 201, p. 71 (1906).

3285. ——. In alluvial deposits. Goana, Mill's Cr., Miclere (*ante*). *Ref.* G.S.Q. Pub. 201, p. 71 (1906).

3286. ——. *Assoc.with* Coal Bands, in conglomerate. Lower Camp, Mill's Cr., Miclere (*ante*). *Ref.* G.S.Q. Pub. 201, p. 70 (1906).

3287.——. In alluvial deposits. Upper Camp, Miclere (*ante*). *Ref.* G.S.Q. Pub. 201, p. 67 (1906).

3288. ——. In alluvial deposits. Black Johnson's, ½-mile W. of 17-Mile Hill, 14 miles N.W.byW. of Clermont. *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 201, p. 65 (1906).

See other Clermont references, *under* Leichhardt Dist. Nos. 3296-3360.

3289. ——. In alluvial deposits. Seven-mile Diggings, 7-Mile Gully, 16 miles N.W. of Clermont. *Co.* Rutledge; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

3290. ——. *Assoc.with* Ironstone, in alluvial deposits. *Loc.* Between 7-Mile and 2-Mile Diggings, 15 miles N.W.byW. of Clermont. *Co.* Rutledge (*ante*). *Ref.* G.S.Q Pub. 27, p. 2 (1886).

3291. ——. In alluvial deposits. *Loc.* Gullies leading from Spurs on Drummond Range, 16 miles N.W. of Clermont. *Co.* Rutledge (*ante*). *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

3291A. ——. In alluvial deposits. **Mt. Wyatt Goldfield**, 60 miles S.S.E. of Ravenswood. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 125, p. 21 (1897).

3292. ——. In alluvial deposits. Isabella Cr. and Mutton Gully, Sellheim R., **Sellheim Mineral Field.** *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 57, p. 2 (1889).

3293. ——. In alluvial deposits. Porphyry Cr., Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 125, p. 21 (1897).

3294. ——. In alluvial deposits. In gully, left bank of Sellheim R., nr. Mt. McConnell, Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 57, p. 1 (1889).

3295. ——. In alluvial deposits. Right bank of Sellheim R., Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 57, p. 2 (1889).

3296. ——. In alluvial deposits. White Gates, Apsley Cr., 4 miles N.N.W. of Clermont, **Clermont Goldfield.** *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 201, p. 74 (1906).

3297. ——. In alluvial deposits. Blue Ground, Black Ridge, 12¾ miles N.byW. of Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 201, pp. 38, 131 (1906).

3298. ——. In alluvial deposits. Cumberland Lead, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 32 (1906).

3299. ——. *Assoc.with* Marcasite, in alluvial deposits. *Loc.* Daintree's Knob, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 28 (1906).

3300. ——. *Assoc.with* Coal Bands, in alluvial deposits. *Loc.* Bantam Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 109 (1906).

3301. ——. *Assoc.with* Coal Bands, in alluvial deposits. *Loc.* Eldorado Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 113 (1906).

3302. ——. In alluvial deposits. Endearer Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 114 (1906).

3303. ——. *Assoc.with* Coal Bands and Epsomite, in old alluvial deposits. *Loc.* Mason's Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 50 (1906).

3304. ——. *Assoc.with* Coal Bands, in alluvial deposits. *Loc.* Nipper Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 122 (1906).

3305. ——. *Assoc.with* Hematite, in alluvial deposits. *Loc.* Pumpkin's Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 126 (1906).

3306. ——. *Assoc.with* Coal Bands, in alluvial deposits. *Loc.* True Blue Claim, Deep Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 20, p. 129 (1906).

3307. ——. In alluvial deposits. Fox's Lead, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p 31 (1906).

3308. ——. In alluvial deposits. Hard Hill Lead, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 37 (1906).

3309. ——. In alluvial deposits. Hillside Claims, Gowrie Cr., Black Ridge (*ante*). *Ref.* G.S.Q Pub. 201, pp. 46 and 131 (1906).

3310. ——. In alluvial deposits. Northern Workings, W. of Gowrie Cr., Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 46 (1906).

3311. ——. *Assoc.with* Iron Pyrites, in alluvial deposits. *Loc.* Smith's Claim, Gowrie Cr., Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 48 (1906).

3312. ——. In alluvial deposits. Turkey's Nest, Gowrie Cr., Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 32 (1906).

3313. ——. *Assoc.with* Marcasite, in alluvial deposits. *Loc.* Cockson's Claim, Old Cricket Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 41 (1906).

3314. ——. In alluvial deposits. Old Cricket Ground, Black Ridge (*ante*) *Ref.* G.S.Q. Pub. 201, p. 38 (1906).

3315. ——. In alluvial deposits. Red Ground, Slaughter-yard Lead, Black Ridge (*ante*). *Ref.* G.S.Q Pub. 201, p 33 (1906)

3316. ——. In alluvial deposits. Smith's Workings, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 33 (1906).

3317. ——. In alluvial deposits. White Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 33 (1906).

3318. Gold. In alluvial deposits. Yellow Ground, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 33 (1906).

3319. ——. In alluvial deposits. Black Snake Lead, 2 miles N.W. of Clermont, Clermont Goldfield. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 176, p. 10 (1902).

3320. ——. In alluvial deposits. Dead Horse and adjoining Leads, 1 mile S. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 176, p. 13 (1902).

3321. ——. In alluvial deposits. Deep Creek Leads, 3 miles S.E.byS. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 103, p. 10 (1895), and 176, p. 14 (1902).

3321A. ——. In alluvial deposits. Fiddler's Cr. Leads, 6 miles N.W.byN. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 176, p. 9 (1902).

3322. ——. In alluvial deposits. Leo's Flat Lead, 4½ miles N.W.byN. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 176, p. 10 (1902).

3323. ——. In alluvial deposits. Flyspeck, McDonald's Flat, 4½ miles S.S.E. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 148, pp. 7, 9, 11 (1900), 176, pp. 15, 16 (1902), and 201, p. 33 (1906).

3324. ——. In alluvial deposits. In the gullies at McDonald's Flat, 3 miles S.byE. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 27, p. 2 (1886), 103, p. 10 (1895), and 176, p. 14 (1902).

3325. ——. In alluvial deposits. Sandy Creek Leads, close to Clermont Township, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 103, p. 11 (1895), and 176, pp. 10, 32 (1902).

3326. ——. *Assoc.with* Psilomelane, in alluvial deposits. *Loc.* Wild Cat Lead, 1 mile S. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 201, pp. 75, 78 (1906).

3327. ——. In alluvial deposits. Wild Cat, Kitten, and Bower Bird Leads, 1 mile S. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 176, p. 11 (1902), and 201, pp. 75-78 (1906).

3328. ——. In alluvial deposits. In the gullies at Copperfield, 5 miles S.S.W. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

3329. ——. In alluvial deposits. Drummond Creek, Copperfield, 3 miles S.W. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 103, p. 11 (1895).

3330. ——. In alluvial deposits. In gullies between Clermont, Drummond, and Douglas Creeks, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

3331. ——. In alluvial deposits. Blacksmith's Gully, 4-Mile Flat, 10 miles W.N.W. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

3332. ——. In alluvial deposits. Wolf's Gully, 4-Mile Flat (*ante*). *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

3333. ——. In conglomerate. Hurley's Deep Lead, 12 miles N.W.byN. of Clermont, Clermont Goldfield. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pubs. 27, p. 2 (1886), and 176, p. 9 (1902), and 201, p. 73 (1906).

3334. ——. In alluvial deposits. Native Bee Diggings, 9 miles W.byN. of Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 176, p. 9 (1902).

3335. ——. *Assoc.with* Marcasite, in alluvial deposits. *Loc.* All Nations Claim, Victoria Lead, The Springs, 11 miles N.N.W. of Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pubs. 27, p. 2 (1886), 176, pp. 5, 8 (1902), 201, p. 22 (1906).

3336. ——. *Assoc.with* Coal, in alluvial deposits. *Loc.* Appleton's Claim (Linklater's Claim), The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 21 (1906).

3337. ——. In alluvial deposits. Black Gully, nr. Pewt's Hill, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 20 (1906).

3338. ——. In alluvial deposits. Bullocky Gully, E. of Dodger's Flat, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 23 (1906).

3339. ——. In alluvial deposits (Permo-Carboniferous). *Loc.* Cement Hill, The Springs (*ante*). *Ref.* G.S.Q. Pubs. 27, p. 3 (1886), 103, p. 11 (1895), 176, pp. 4-9 (1902), and 201, pp. 16, 18 (1906).

3340. ——. *Assoc.with* Limonite, in alluvial deposits. *Loc.* Christmas Hill, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 24 (1906).

3341. ——. In alluvial deposits. Duffer Gully, E. of Smith's Hill, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 23 (1906).

3342. ——. In alluvial deposits. Leonard's Gully, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 23 (1906).

3343. ——. *Assoc.with* Dolomite, in alluvial deposits. *Loc.* Limestone Hill, Gowrie Cr., The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 19 (1906).

3344. ——. In alluvial deposits. McFadyen's Lead, Gowrie Cr., The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 19 (1906).

3345. ——. In alluvial deposits. Morgan's Gully, S. of Smith's Hill, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 23 (1906).

3346. ——. In alluvial deposits. Pink Hill, N.W. of Black Gully, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 21 (1906).

3347. ——. In alluvial deposits. Prospector's Gully, Cement Hill, The Springs (*ante*). *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

3348. ——. In alluvial deposits. Scrubby Gully, The Springs (*ante*). *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

3349. ——. In alluvial deposits. Smith's Hill, E. of Dodger's Flat, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 23 (1906).

3350. ——. *Assoc.with* Coal Bands, in old alluvial deposits. Springs Cr., The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 19 (1906).

3351. ——. In alluvial deposits St. Patrick's Gully, Dodger's Flat, The Springs (*ante*). *Ref.* G.S.Q. Pubs. 27, p. 2 (1886), and 201, p. 22 (1906).

3352. ——. In alluvial deposits. Victoria Lead, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, pp. 21, 22 (1906).

3353. ——. *Assoc.with* Limonite, in alluvial deposits. *Loc.* Well and Hill's Claim, Pewt's Hill, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 20 (1906).

3354. ——. In alluvial deposits. White Hill, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 19 (1906).

3355 ——. In alluvial deposits. Bath Cr., Venus, 10 miles N.W.byN. of Clermont. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

3356. ——. In alluvial deposits. Mt. Walker, 1 mile N.W. of Venus, 11 miles N.W. byN. of Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 201, pp. 72, 79 (1906).

3357. ——. In alluvial deposits. Old 4-Mile Lead, 1¼ mile W.N.W. of Venus, 10 miles N.W.byW. of Clermont (*ante*). *Ref.* G.S.Q. Pub. 201, pp. 72, 73 (1906).

3358. ——. In alluvial deposits. Venus Flat, Bath Cr., Venus (*ante*). *Ref.* G.S.Q. Pub. 201, p. 72 (1906).

3359. ——. In alluvial deposits. Venus Leads, nr. junction of Bathampton and Hurley Crs., Venus (*ante*). *Ref.* G.S.Q. Pub. 176, p. 9 (1902).

3360. ——. In alluvial deposits. Theresa Cr., Peak Vale Stn., 18 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 175, p. 10 (1902). *See other* Clermont References under Kennedy South Dist. Nos. 3277-3288.

3361. ——. *Assoc.with* Diamond, Sapphire, Spinel, Garnet, Zircon, Topaz, Amethyst, Cairngorm, Jasper, Chalcedony, Tourmaline, Hornblende, Rutile, Ilmenite, Magnetite, and Magnesite, in alluvial deposits. *Loc.* Retreat, Sheep Stn., Policeman, Tomahawk, and Central Crs., **Anakie Sapphire Field,** 193 miles (by rail) W. of Rockhampton (Central line). *Cos.* Clermont and Plantagenet (*ante*). *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), and 172 (1902).

3362. ——. In alluvial deposits. In gullies about Mt. Bullock, 6 miles N.W.byW. of Anakie Rail. Stn. (Central line). *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 172, p. 4 (1902).

3363. ——. In alluvial deposits. Paddy's Gully, 1½ mile of Rookwood Stn., 44 miles W.byS. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 9 (1901).

3364. ——. *Assoc.with* Garnet, Zircon, Magnetite, and Tourmaline, in alluvial deposits below basalt. *Loc.* Basalt Hill Diggings, 3 miles N. of Borilla Rail. Stn. (Central line). *Co.* Plantagenet; *Dist.* Leichhardt. *Ref.* G.S.Q. Pubs. 81, p. 3 (1892), and 172, p. 7 (1902).

3365. ——. In alluvial deposits. Mine Cr., trib. of Black Waterhole Cr., 5 miles N.byE. of Hazledean, 40 miles S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 164, p. 10 (1901).

3366. ——. In alluvial deposits. Moonlight Cr., **Mt. Britton Goldfield,** 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 35 (1887).

3366A. ——. *Assoc.with* Ilmenite, in alluvial deposits. *Loc.* Torrens Cr., 98 miles (by rail) S.W.byS. of Charters Towers. *Co.* Woura; *Dist.* **Mitchell.** *Ref.* O.R. (1909).

3366B. Gold. In alluvial deposits. Squirrel Cr., 7 miles N.W. of Monsildale Stn., 20 miles (by road) from Mooretown, and 20 miles N.byW. of Kannangur Rail. Stn. (Brisbane-Valley line). *Co.* Canning; *Dist.* **Moreton.** *Ref.* Q.G.M.J., vol. 5, p. 554 (1904).

3366C. ——. *Assoc.with* Sapphire, Pleonaste, etc., in alluvial deposits. *Loc.* Bunker's Hill, nr. Crow's Nest Rail. Stn. (Ravensbourne), 34 miles N.N.E. of Toowoomba. *Co.* Cavendish; *Dist.* Moreton. *Ref.* B.D.

3367. ——. *Assoc.with* Ruby, Spinel, Sapphire (blue), Garnet (red), Topaz (white), and Zircon, in alluvial deposits. *Loc.* Wallace's and Eldridge's Claim, **Seven-mile Diggings,** 7 miles S.E. of Nanango, and 40 miles (by road) N.W.byW. of Kannangur Rail. Stn. (Brisbane-Valley Br. line). *Co.* Cavendish (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 525 (1906).

3368. ——. In alluvial deposits. Yarraman Cr., Seven-mile Diggings (*ante*). *Ref.* G.S.Q. Pub. 29, p. 2 (1886).

3369. ——. In alluvial deposits, and in quartz and ironstone. *Loc.* nr. Grimes's Paddock (beyond Saltern's), on Ipswich Road, ½-mile W. of Rocklea Rail. Stn. (S. Coast line), and 6½ miles (by rail and road) S. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* B.D.

3370. ——. *Assoc.with* Silver, Platinum, Cassiterite, and Monazite, in beach deposits. *Loc.* Currumbin Cr., 1 mile N. of Point Danger, S. Coast of Queensland, 69 miles (by rail) S.S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 198 (1905).

3371. ——. *Assoc.with* Magnetite, in beach deposits. *Loc.* Currumbin Cr., 1 mile N. of Point Danger (*ante*). *Ref.* G.S.Q. Pub. 51, p. 5 (1889).

3372. ——. *Assoc.with* Magnetite, in beach deposits. From mouth of Nerang Cr. to Tweed Heads, 49 to 69 miles (by rail) S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 51, p. 5 (1889).

3373. ——. In alluvial deposits. Diggers' Cr., **Barmundoo (Tableland) Goldfield,** 28 miles S.byW. of Gladstone. *Co.* Clinton or Raglan; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 58, p. 6 (1889).

3374. ——. In alluvial deposits. *Loc.* Diglum Cr., Barmundoo, 30 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 162, p. 6 (1901).

3375. ——. In alluvial deposits. *Loc.* Chandler's Gully, **Eastern Boyne Goldfield,** 26½ miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 150, p. 9 (1900).

3376. ——. In alluvial deposits. Machine Cr., E. side of Boyne Range, about 15 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 4 (1885).

3377. ——. In alluvial deposits. New Zealand Gully, E. side of Boyne Range, 5 miles S.E. of Calliope, 17 miles S.E. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 4 (1885).

3378. ——. In alluvial deposits. Pancake Gully, E side of Boyne Range, 14 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 4 (1885).

3379. ——. In alluvial deposits. Tucker's Gully, E. of Boyne Range, 12 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 4 (1885).

3380. ——. In alluvial deposits. Nuggety Gully, Calliope Township, 12 miles S. of Gladstone, **Calliope Goldfield.** *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

3381. ——. In alluvial deposits. Watercourses at the head of Brennan's Flat,, 3 miles S.S.E. of Calliope, Calliope Goldfield (*ante*). *Ref.* G.S.Q. Pub.. 21, p. 3 (1885).

3382. ——. In alluvial deposits. Dog-leg Gully, trib. of Oakey Cr., 1 mile E.byS. of Calliope, Calliope Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

3383. ——. In alluvial deposits. Gordon's Gully, head of Leixlip Cr., 4 miles S.E. of Calliope; and 16 miles S. of Gladstone, Calliope Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

3384. ——. In alluvial deposits. Seven-mile Diggings, 6 miles E. of Calliope Township, 18 miles S. of Gladstone, Calliope Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 4 (1885).

3385. ——. In alluvial deposits. Ten Men's Gully, br. of Oakey Cr., 3 miles S.E. of Calliope, 15 miles S. of Gladstone, Calliope Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

3386. ——. In alluvial deposits. Moonlight Gully, Two-mile Diggings, 3 miles S. of Raglan Rail. Stn. (N. Coast line), 37 miles (by rail and road) W.N.W. of Gladstone, **Raglan Goldfield.** *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

3387. ——. In alluvial deposits. Mt. Larcombe Scrub, about 6 miles S.E. of Raglan (N. Coast line), 40 miles (by rail and road) W.N.W. of Gladstone, Raglan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

3388. ——. In alluvial deposits. Old Diggings, S. of Mt. Holly, about 4½ miles S. of Raglan Rail. Stn., 38½ miles (by rail and road) W.N.W. of Gladstone, Raglan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

3389. ——. In alluvial deposits. Two-mile Diggings, head of Fire Cr., about 3 miles S. of Raglan Rail. Stn. (N. Coast line), 37 miles (by rail and road) W.N.W. of Gladstone, Raglan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

3390. ——. In alluvial deposits. **Ulam Goldfield**, 3 miles S. of Toonda Rail. Stn. (N. Coast line), 44 miles (by rail and road) W.S.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.M.

3391. ——. In alluvial deposits. **Canoona Goldfield**, 26 miles N.byW. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 125, p. 19 (1894).

3392. ——. In alluvial deposits. *Loc.* Gully N. from Western Workings, Oaks View, 4 miles N. of Oaks Stn., 45 miles (by road) N.N.W. of Rockhampton. *Co.* Liebeg (*ante*). *Ref.* G.S.Q. Pub. 205, p. 18 (1906).

3393. ——. In alluvial deposits. **Cawarral Goldfield**, 15 miles (by rail) N.N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 126, p. 20 (1897).

3394. ——. In alluvial deposits. *Loc.* **Morinish Goldfield**, 29 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G S.Q. Pub. 125, p. 20 (1897.)

3395. ——. In alluvial deposits. Peter's Rush, Dee R., Mt. Usher, 4½ miles N.E. of Mt. Morgan Rail. Stn., and about 28 (by rail and road) S.S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* O.M.

3396. ——. In alluvial deposits. Herbert Cr. Diggings, Bailey's Gully, 10 miles E.S.E. of Herbert Cr. Rail. Stn. (Central line), and 64 miles (by rail and road) S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 155, p. 9 (1901).

3397. ——. In alluvial deposits. Native Cat and Candle-light Creeks, 6 miles W.byS. of Stanwell Rail. Stn. (Central line). *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

3397A.——. In alluvial deposits. **Rosewood Goldfield**, 32 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* A.R.D.M., p. 105 (1908).

3398. ——. In alluvial deposits. Box Flat, 3 miles down Dee River, 20 miles S.S.W. of Mt. Morgan, 44 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* A.R., p. 126 (1907).

3399. ——. In alluvial deposits. Callide Cr. Gullies, 52 miles S.W.byW. of Gladstone. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 80, p. 1 (1891).

3400. ——. In alluvial deposits containing basaltic ejectamenta. *Loc.* Cameron's Lookout, Callide Range, **Mt. Rainbow Goldfield**,, 42 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 126, pp. 1-3 (1897), and G.S.M.

3401. ——. *Assoc.with* Silver and Copper, in alluvial deposits (?). *Loc.* Mt. Rainbow Goldfield (*ante*). *Assay:* Gold = 4 dwt. 5 gr.; Silver = 50 oz. 8 dwt. 19 gr. per ton; Copper = 26·4 per cent. *Ref.* A.R., p. 44 (1906).

3402. ——. In alluvial deposits. Glen Dee, Dee R., 5 miles E.N.E. of Mt. Morgan. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 161, pp. 12-15 (1901).

3403. ——. In alluvial deposits. Four-mile Cr., nr. Moonmera Rail. Stn. (Mt. Morgan line), 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 195, p. 17 (1904).

3404. ——. In alluvial deposits. In gullies between North and Middle Peaks, near Moonmera Rail. Stn., 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 195, p. 17 (1904).

3405. ——. In alluvial deposits. East of Mt. Scott, near Moonmera Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 195, p. 17 (1904).

3406. ——. In alluvial deposits. Mt. Victoria, 3 miles W.S.W. of Mt. Morgan Rail. Stn., 27 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 87, p. 12 (1892).

3407. ——. In alluvial deposits. Colo Flat, 12 miles N.byE. of Kilkivan, **Marodian Goldfield.** *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 179, p. 1 (1902).

3408. ——. In alluvial deposits. Sel. 649, Yorkey's Hill, nr. Yorkey's Cr., 10 miles N.byE. of Kilkivan, Marodian Goldfield (*ante*). *Ref.* G.S.Q. Pub. 59, p. (1890.)

3409. ——. In alluvial deposits. Brooya Stn., Mary R., 20 miles N.W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* Q.M.

3410. Gold. In alluvial deposits. Mt. Ruby, ½-mile W.S.W. of Glenbar Head Stn., 20 miles W. of Tiaro Rail. Stn. (N. Coast line). *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

3411. ——. In alluvial deposits. Chinaman's Cr., trib. of Mary R., near Mt. Ubi, west of Blackall Range, 15 miles W.byS. of Palmwoods Rail. Stn. (N. Coast line). *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 196, p. 4, 5 (1905).

3412. ——. *Assoc.with* Platinum (?), in alluvial deposits. *Loc.* Brickfield Gully, nr. Lady Mary Mine, **Gympie Goldfield,** 106 miles (by rail) N.byW. of Brisbane (North Coast line). *Co.* March (*ante*). *Ref.* B.D.

3412A.——. In shallow alluvial deposits. *Loc.* Base of Mt. Cooroora, nr. Pomona Rail. Stn. *Co.* March; *Dist.* Wide Bay. *Ref.* B.D.

3413. ——. In alluvial deposits. Nash's Gully, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 1 (1889).

3414. ——. In alluvial deposits. Nuggety Gully, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 1 (1889).

3515. ——. *Assoc.with* Quartz, in alluvial deposits. *Loc.* Ora Cr., Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 12 (1889).

3416. ——. In alluvial deposits. Sailor's Gully, Deep Cr., Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 1 (1889).

3417. ——. In alluvial deposits. Walker's Gully, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 1 (1889).

3418. ——. In alluvial deposits. White's Gully, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 1 (1889).

3419. ——. In alluvial deposits. In gullies and on alluvial flats, "Two Mile," N.W. of Gympie, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 1 (1889).

3420. ——. In alluvial deposits. Bartle Bay, 208 miles E. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 30 (1892).

3421. ——. *Assoc.with* Cinnabar, in alluvial deposits. *Loc.* Duan (Normanby) Island, D'Entrecasteaux Island, 262 miles E. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 85, p. 31 (1892).

3421A.——. *Assoc.with* Magnetite, in alluvial deposits. *Loc.* Gleeson Is., 100 miles up Avo, Purari R., 228 miles N.W. of Port Moresby (*ante*). *Ref.* A.R.B.N.G., p. 95 (1894).

3422. ——. *Assoc.with* Cinnabar, in alluvial deposits. *Loc.* Fergusson (Moratau) Is., 231 miles E. of Port Moresby (*ante*). *Ref.* G.S.M.

3423. ——. *Assoc.with* Topaz and Beryl, in alluvial deposits. *Loc.* Fly R., 304 miles W.byN. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 77, p. 8 (1891).

3424. ——. In alluvial deposits. Mambare R., **Gira Goldfield,** 96 miles N.N.E. of Port Moresby (*ante*). *Ref.* G.S.M.

3425. ——. In alluvial deposits. McKeo (St. Joseph) River, 64 miles N.N.W. of Port Moresby (*ante*). *Ref.* G.S.M.

3426. ——. As finely crystallised pieces, not waterworn, in alluvial deposits. *Loc.* Ana (St. Patrick's) Cr., St. Aignan (Misima) Is., 379 miles E.byS. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 30 (1892).

3427. ——. In alluvial deposits. Gumonina (Inkomanina) Creek, St. Aignan's (Misima) Is. (*ante*). *Ref.* G.S.Q. Pub. 85, pp. 26, 30 (1892).

3428. —— (crystallised), in surface deposits. **St. Aignan** (Misima) **Island** (*ante*).

3429. ——. *Assoc.with* Magnetite, in alluvial deposits. *Loc.* St. Joseph R., 68 miles N.N.W. of Port Moresby (*ante*). *Ref.* A.R.B.N.G., p. 96 (1894), and G.S.M.

3430. ——. In alluvial deposits. Sudest Is., 448 miles E.S.E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 30 (1892).

3431. ——. *Assoc.with* Mica, Magnetite, Ilmenite, Zircon, and Topaz, in yellow alluvial deposits. Seventeen miles up Vanapa River, 32 miles N. of Port Moresby (*ante*). *Ref.* G.S.Q. Pubs. 56, p. 2 (1889), and 85, p. 31 (1892).

3432. ——. In magnetic sand from pipe vein of clay and quartz, in alluvial deposits. *Loc.* Colonidow, 6 miles from Busai, Woodlark Island, 384 miles E. of Port Moresby (*ante*). *Ref.* G.S.M.

3433. ——. In alluvial deposits. Woodlark Is. (*ante*). *Ref.* G.S.M.

3434. ——. In alluvial deposits. **Yodda Valley Goldfield,** 86 miles N.E.byE. of Port Moresby, Brit. New Guinea. *Ref.* G.S.M.

3435. **Gold Nuggets.** *Weight,* 336 oz. *Loc.* Chinaman's Flat, Top Camp Diggings, Cloncurry Road, 24 miles S.byW. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 104, p. 5 (1895).

3436. —— ——. *Weight,* 17½ oz. *Loc.* Mary Douglas Hill, Top Camp Diggings (*ante*). *Ref.* A.R.D.M., p. 43 (1896).

3437. —— ——. *Weight,* 17 oz. *Loc.* Italian Gully, trib. of Oxley Cr., 25 miles W.byN. of Upper Cape, **Cape River Goldfield.** *Co.* Wongaler; *Dist.* Burke. *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

3437A.—— ——. *Weight,* 90 oz. *Loc.* Corbett's Gully, 1 mile S.E. of Ebagoola, **Hamilton Goldfield.** *Co.* Coen; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 163, p. 5 (1901).

3438. —— ——. *Weights,* from 8 oz. to 180 oz. *Loc.* **Green Hills Goldfield,** 24 miles S.W.byS. of Georgetown, Etheridge. *Co.* Gilbert or Lang; *Dist.* Cook. *Ref.* A.R.D.M., p. 8 (1896).

3439. —— ——. *Weights,* up to 12 oz. *Loc.* Dunn's Gully, 4 miles W.byS. of Pratten, 21 miles W.N.W. of Warwick, **Talgai Goldfield.** *Co.* Merivale; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 40, p. 3 (1887).

3440. —— ——. *Weight,* 65 oz. *Loc.* Gum Flat, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 55 (1898).

3441. —— ——. *Weights,* from 1 oz. to 16 oz. *Loc.* Gullies on the Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 55 (1898).

3441A.—— ——. *Weight,* 30 oz. *Loc.* Victoria Lead, The Springs, 11 miles N.N.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 48, p. 25 (1888).

3441B.—— ——. *Weight,* 48 oz. Found in 1864. McDonald's Flat, 3 to 4 miles S.byE. of Clermont. *Co.* Clermont (*ante*). *Ref.* B.D.

3441C.—— ——. *Weight,* 30 oz. Found October 27th, 1878. Copperfield, 5 miles S.S.W. of Clermont. *Co.* Clermont (*ante*).

3442. —— ——. *Weights,* 60 oz., 80 oz., 100 oz. Found in 1881. *Loc.* Moonlight Cr., **Mt. Britton Goldfield,** 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 6 (1887), and A.R.D.M., p. 40 (1884).

3443. —— ——. *Weights,* 69 oz., 60 oz., 50 oz., 45 oz., 40 oz., 35 oz. Found in 1881. *Loc.* Nuggety Gully, Mt. Britton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 5 (1887).

3444. —— ——. *Weight,* 73 oz. Found in 1866 (?). *Loc.* Nuggety Gully, **Calliope Goldfield,** 12 miles S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.**

3445. —— ——. *Weight,* 56 oz. **Langmorn Goldfield,** 8 miles W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. Nugget found by Edward Longstaff, in 1867.

3446. —— ——. *Weight* 17 oz. 15 dwt. Value, £68 17s. Ulam Goldfield, 44 miles (by rail and road) W.N.W. of Gladstone. *Co.* Deas Thompson (*ante*).

—— ——. *Dee River Nuggets*—

Weight—		*Weight*—	
182 oz.	... S. Heiser.	60 oz.	... Fehring and Party.
179 ,,	... O'Farrel and O'Shea.	60 ,,	... Nun and Mate.
171 ,,	... Davidson and Party.	60 ,,	... Sutherland and de Caux.
114 ,,	... Burke and Party.	59 ,,	... Fehring and Party.
108 ,,	... Jas. Stewart.	58 ,,	... Green and Party.
100 ,,	... Newbiggens and Party.	58 ,,	... Bowes and Party.
96 ,,	... Barden and Party.	57 ,,	... Sutherland and de Caux
87 ,,	... Linde and Party.	55 ,,	... Heiser and Party.
82 ,,	... Green and Party.	54 ,,	... Rowley and Party.
82 ,,	... Brown and Party.	53 ,,	... Rule and Party.
81 ,,	... Davidson and Party.	53 ,,	... Sutherland and de Caux.
80 ,,	... Townsend and Party.	52 ,,	... Townsend and Party.
75 ,,	... Heiser and Party.	51 ,,	... Davidson and Party.
77 ,,	... Mortinson and Party.	50 ,,	... Crawford and Party.
66 ,,	... Wm. Large.		

The above nuggets, together with others varying in weight from 40 oz. downwards, contained 4,350 oz., of an estimated value of £18,000, found in alluvial deposits between Sept., 1903, and Aug., 1904. *Loc.* Peters Rush, Dee R., 2 miles from Mt. Usher, 4½ miles N.E. of Mount Morgan Rail. Stn. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* "Daily Record," Rockhampton.

3447. —— ——. *Weight,* 258 oz., valued at £1,000. Found in 1868. *Loc.* Mt. Wheeler, 3 miles E.N.E. of Cawarral, 18 miles N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 48, p. 32 (1888).

3448. —— ——. *Weight,* 109 oz. *Loc.* Crocodile Cr. (1865), **Mount Morgan** (Crocodile Cr.) **Goldfield,** 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* (?).

3449. Gold Nuggets. *Gross weight,* 975 oz. Found in 1867. Assayed by Sydney Mint, and found to contain 906 oz. of gold, the value being £3,132 9s. 9d. *Loc.* Gympie Cr., **Gympie Goldfield,** 106 miles (by rail) N.byW. of Brisbane (North Coast line). *Co.* March; *Dist.* **Wide Bay.** *Ref.* P.R.S.Q., vol. 4, p. 35 (1887), and O.R.

3450. —— ——. *Weight,* 804 oz. *Loc.* Sailor's Gully, Deep Cr., Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 1 (1889).

3450A.—— ——. *Weight,* 80 oz. Found November 28th, 1877. *Loc.* No. 1 New Zealand Mine, Gympie Goldfield (*ante*). *Ref.* "In the Early Days," by J. J. Knight (1895).

3450B. **Gold in Quartz.** Fullarton R., about 26 miles N.E.byE. of Tip Top Diggings, and about 30 miles W. of Mackinlay, and about 76 miles *viâ* Tip Top or Mackinlay, S.S.E. of Cloncurry. *Co.* Allison; *Dist.* **Burke.** *Ref.* Q.G.M.J., vol. 5, p. 517 (1904).

3451. ——. *Assoc.with* Redruthite, in quartz reef. *Loc.* S. of Lease 61, Dugald R., 45 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 153, p. 8 (1900).

3452. ——. *Assoc.with* Iron Pyrites, Hematite, and Limonite. *Loc.* Gilded Rose Mine, Bishop's Cr., 11 miles E.S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Yield:* Gold = 2 oz. per ton. *Ref.* G.S.Q. Pubs. 10, pp. 13-15 (1885), and 104, p. 3 (1895).

3452A.——. *Assoc.with* Silver and Ironstone, in quartz. *Loc.* King Edward VII. Claim, Bishop's Cr. (*ante*). *Ref.* A.R., p. 282 (1910).

3453. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Surprise Leader, E. of Gilded Rose Reef, Bishop's Cr. (*ante*). *Ref.* G.S.Q. Pub. 104, p. 3 (1895).

3454. ——. *Assoc.with* Copper Carbonate and Tetrahedrite. *Loc.* Flying Dutchman, Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

3455. ——. *Assoc.with* Native Copper, Cuprite, Malachite, and Azurite. *Loc.* Homeward Bound M.C. 331, Pumpkin Gully (*ante*). *Ref.* G.S.Q. Pubs. 10, p. 4 (1885), and 215, pp. 233, 234 (1908).

3456. ——. *Assoc.with* Hematite, Calcite, Siderite, in quartz. *Loc.* Uncle Tom Reef, between Fisher's Cr. and Pumpkin Gully (*ante*). *Ref.* P.R.S.Q., vol. 4, pp. 40, 73 (1887).

3457. ——. *Assoc.with* Copper Pyrites, Siderite, and Tourmaline, in quartz and calcite. *Loc.* S. of Fisher's Cr., Pumpkin Gully (*ante*). *Ref.* G.S.Q. Pub. 104, p. 4 (1895).

3458. ——. *Assoc.with* Ironstone, in quartz reef. *Loc.* Bertha P.C., Bower Bird Goldfield, 70 miles N.W. of Cloncurry. *Co.* Brahe or Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 3 (1895).

3459. ——. In quartz leaders, in clay slate. *Loc.* Gertrude Mine, Douglas Cr., 4 miles from Sunday Gully, **Bower Bird Goldfield** (*ante*). *Ref.* G.S.Q. Pubs. 104, p. 3 (1895), 125, p. 2 (1897).

3460. ——. *Assoc.with* Ironstone, in quartz reef. *Loc.* Lily of the Valley P.C., Bower Bird Goldfield (*ante*). *Ref.* G.S.Q. Pub. 104, p. 2 (1895), and G.S.M.

3461. ——. *Assoc.with* Malachite, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Victoria P.C., Victoria Reef, Bower Bird Goldfield (*ante*). *Ref.* G.S.Q. Pub. 104, p. 2 (1895), and G.S.M.

3462. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Copper Carbonate, in quartz reef. *Loc.* Victoria 1 N. Claim, Bower Bird Goldfield (*ante*). *Ref.* G.S.Q. Pub. 104, p. 2 (1895).

3463. ——. In quartz. Catherine Reef, 8-Mile, **Agate Downs Goldfield,** 51 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.M.

3464. ——. In ironstone. Critchner's Mine, nr. Fine Gold Cr., Agate Downs Goldfield (*ante*). *Ref.* G.S.M.

3465. ——. In ferruginous quartz. Gibson's Claim, Tip Top Camp, Agate Downs Goldfield (*ante*). *Ref.* G.S.M.

3466. ——. In quartz. Kaufman's Reef, Fine Gold Cr., Agate Downs Goldfield (*ante*). *Ref.* G.S.M.

3467. —— (wire). *Assoc.with* Chrysocolla and Lievrite, in clayey talcose matrix, and in veins in slate. *Loc.* Nr. Maggie's Cr., Tip Top Camp, Agate Downs Goldfield (*ante*). *Ref.* G.S.Q. Pub. 104, p. 6 (1895), and G.S.M.

3468. ——. *Assoc.with* Iron Pyrites and Ironstone, in quartz and calcite. *Loc.* Last Call Reef, Martin's Cr., 12 miles S.E. of Top Camp, 25 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 5 (1895), and G.S.M.

3469. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Limonite, Calcite, Actinolite, Chlorite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group, 1½ mile N.N.W. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

3469A.——. *Assoc.with* Native Copper, Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. pp. 219-224 (1908).

3470. —— (traces). *Assoc.with* Silver (traces), Redruthite, Malachite, Turgite, and Siderite, in chloritic schist and quartz. *Loc.* Noontide M.L. (239), (Pioneer Chief Group), W. of Cone Cr., ½-mile N. of Duck Cr., 27 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 129-131 (1908).

3471. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Azurite, Malachite, and Limonite, in chloritic schist. *Loc.* Pioneer Copper Lease (229), (Diagonal Group), S. of Duck Cr., 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 132-135 (1908).

3472. ——. *Assoc.with* Limonite, in quartz and calcite. *Loc.* Rose and Thistle Reef, Weatherley Cr., nr. Soldier's Cap, 24 miles SE.byS. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 104, p. 4 (1895).

3473. ——. *Assoc.with* Ironstone and Chalcedony, in quartz. *Loc.* Saracinesca Reef, between Rose and Thistle Reef and Soldier's Cap, 24 miles S.E.byS. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 104, p. 4 (1895).

3473A.——. *Assoc.with* Ironstone, in quartz. *Loc.* Black Fort Mt., nr. Top Camp, 24 miles S.byW. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* A.R., p. 268 (1910).

3474. ——. *Assoc.with* Calcite, in quartz. *Loc.* Weatherley's Reef, Weatherley Cr., nr. Soldier's Cap Diggings, 24 miles S.E.byS. of Cloncurry. *Co.* Selwyn (*ante*). *Yield:* Gold = 2 oz. per ton. *Ref.* G.S.Q. Pub. 10, p. 15 (1885).

3474A.——. *Assoc.with* Malachite, Tile Ore, and Limonite, in lode. *Loc.* Soldier's Cap Diggings (*ante*). *Ref.* A.R., p. 278 (1910).

3475. ——. *Assoc.with* Bismuth, in quartz leader. *Loc.* Two-mile Cr. Diggings, Blackfellow's Gully, 23 miles S.byW. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 104, p. 5 (1895).

3476. ——. In serpentinous quartz. May Day Reef, Belmore Cr., 2 miles N.E. of Croydon Rail. Stn., **Croydon Goldfield.** *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.M.

3477. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Blue Jacket Reef, Carron, 15 to 16 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 43 (1896).

3478. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Gilded Rose P.C. Lease (387), and No. 1 E. Mine, Carron (*ante*). *Ref.* G.S.Q. Pub. 118, p. 43 (1896).

3479. ——. *Assoc.with* Galena, in quartz. *Loc.* Jumbo Reef, Carron (*ante*). *Ref.* G.S.Q. Pub. 118, p. 44 (1896).

3480. ——. In quartz. Vanderbilt Reef, Carron (*ante*). *Ref.* G.S.Q. Pub. 118, p. 43 (1896).

3481. ——. *Assoc.with* Iron Pyrites and Galena, in quartz reef. *Loc.* Sarnia Gem Reef, Carron (*ante*). *Ref.* G.S.M.

3482. ——. In quartz. Bennion's Reef, Croydon Township, 94 miles (by rail) S.E. of Normanton, Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, pp. 12-14 (1907).

3483. ——. *Assoc.with* Silver, in graphitic quartz reef. *Loc.* Black Snake P.C., 1 mile E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 37 (1897).

3484. ——. *Assoc.with* Iron Pyrites, Graphite, and Felspar, in quartz. *Loc.* Caledonia Reef, 1 mile S.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, pp. 8, 9 (1887).

3485. ——. *Assoc.with* Iron Pyrites, Ironstone, and Graphite (impure), in quartz. *Loc.* Come-at-Last Reef, W. of Iguana, about 30 chains N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

3486. ——. In quartz. Contents Reef, 3 miles N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 13 (1896).

3487. ——. In quartz. The "Spare Ground," Iguana Hill, about 30 chains N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 20 (1896).

3488. Gold. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Iguana Reef, Iguana Hill (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 8 (1887), and 118, p. 18 (1896).

3488A.——. *Assoc.with* Ironstone and Graphite (impure), in quartz. *Loc.* Norah Reef, ¼-mile N. of Iguana Hill, Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

3489. ——. *Assoc.with* Galena, Iron Pyrites, and Zinc Blende, in quartz. *Loc.* La Reine D'or Mine, Queen of Croydon Reef, 1 mile N. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 16 (1896), and G.S.M.

3490. ——. In quartz. Lady Mary Reef, about ½-mile E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 21 (1896), and G.S.M.

3491. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Ophir Block, Iguana Reef, 30 chains N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 19 (1896),

3492. ——. *Assoc.with* Iron Pyrites, Limonite, and Zinc Blende, in quartz. *Loc.* Post Hole Reef, about 28 chains N.E.byE. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 8 (1887), and 118, p. 21 (1896).

3493. ——. *Assoc.with* Limonite, in quartz. *Loc.* Queen of Croydon Reef, 1 mile N. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

3493A.——. *Assoc.with* Native Silver and Limonite, in quartz. *Loc.* Miners' Right Lease, Queen of Croydon Reef, about 1 mile E.byS. of Croydon Rail. Stn., Croydon Goldfield (*ante*).

3494. ——. *Assoc.with* Ironstone, Chlorite, and Graphite, in quartz. *Loc.* Sir Walter Reef, ½-mile E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

3494A.——.*Assoc.with* Iron Pyrites and Hematite, in quartz. *Loc.* Sovereign 1 Mine, Post Hole Reef, ¾-mile N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

3495. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Sovereign Reef, about 28 chains N.E.byE. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 8 (1887), and 118, p. 21 (1896).

3496. ——. *Assoc.with* Graphite, in quartz. *Loc.* St. Patrick Block Lease, about 35 chains N.E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 20 (1896).

3497. ——. *Assoc.with* Silver, Iron Pyrites, and Galena, in quartz. *Loc.* Waratah Lease (570), Queen of Croydon Reef, 1¾ mile E.byS. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Assay: See* No. 7426. *Ref.* G.S.Q. Pub. 118, p. 17 (1896), and G.S.M.

3498. ——. *Assoc.with* Iron Pyrites, Hematite, Galena, and Graphite, in quartz. *Loc.* King of Croydon Reef, 5½ miles S.E.byE. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 7 (1887), and 118, p. 25 (1896).

3499. ——. In porphyry. Pack Saddle Reef, 1½ mile S. of Croydon King, 6 miles S.E.byE. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 118, p. 25 (1896).

3500. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Richmond Reef, 1½ mile E.N.E. of Croydon King, about 6 miles E.S.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 26 (1896).

3500A.——. In quartz. Morning Light Reef, 7 miles E.S.E of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 26 (1896).

3501. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* C. D. Roe Reef, nr. Flanagan's, about 12 miles E.byS. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 47 (1896).

3502. ——. *Assoc.with* Galena and Iron Pyrites, in ferruginous quartz. *Loc.* Duchess Reef, nr. Flannagan's (*ante*). *Ref.* G.S.Q. Pub. 35, p. 11 (1887).

3503. ——. *Assoc.with* Iron Pyrites, Minium, Hematite, and Limonite, in quartz. *Loc.* Eureka Reef, nr. Flanagan's (*ante*). *Ref.* G.S.Q. Pub. 35, p. 11 (1887), and 118, p. 47 (1896).

3504. ——. In quartz. Wanderer, Parnell, Kings of the Springs and Democrat Reefs, Flanagan's (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 47, 48 (1896).

3505. ——. In quartz. Ryan's 12 S. Mine (Banner of Freedom Reef), Golden Gate, 90 miles (by rail) E.S.E. of Normanton (Croydon line), and 4 miles N.W. of Croydon. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 202, p. 34 (1903).

3506. ——. In quartz and graphitic formation. Banner Block United 14 S. (Murray's), and Banner 18 S. Mines (Golden Gate Reef), Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 202, pp. 34, 35 (1905).

3507. ——. In quartz. Golden Gate Consols, 1 and 2 S. Lease (967), 3 and 4 S., 4 and 5 S. Block ("98"), 5 S., 5 and 6 N., 7 N., and Douglas Block Shaft, 9 N., 10 N., and 10 and 11 W., Golden Gate, Ltd. (Roger's No. 1), Golden Gate United Mines (Golden Gate Reef), Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 202, pp. 17-25 (1905).

3508. ——. In quartz. Golden Gate 7 S., 8 S. (Baltic), 8 S. Block, 9 S. and 9 S. Block, and 10 and 11 S. Block, Golden Gate and Nancy Lee United (Viles's), and Golden Gate and Nancy Lee Consols Mines (Golden Gate and Nancy Lee Reefs), Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 202, pp. 26-30 (1905).

3509. ——. In quartz. Morgan's Block Shaft (Golden Gate Reef), Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 202, p. 26 (1905).

3510. ——. In quartz. "Butcher Boy" Leader, in Golden Gate 10 and 11 S. Block Mines, and in Plant's Shaft, G.G. Gold Mines, G.G. Reef, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 202, pp. 32, 33 (1905).

3511. ——. In quartz. "Magpie" Leader, in G.G. 11 and 12 S. Mines, G.G. Reef, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 202, pp. 32, 33 (1905).

3512. ——. *Assoc.with* Iron Pyrites, Galena, Fluorspar, Calcite, and Argentine, in quartz. *Loc.* Plant's Shaft, G.G. Gold Mines, G.G. Reef, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 202, pp. 30-32 (1905).

3513. ——. *Assoc.with* Graphite and Calcite, in granite. *Loc.* Plant's Shaft, G.G. Gold Mines, G.G. and Nancy Lee Reefs, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 202, pp. 26-30 (1905).

3514. ——. *Assoc.with* Limonite. *Loc.* Banner of Freedom Reef, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 35, p. 9 (1887), and 202, p. 34 (1905).

3515. ——. *Assoc.with* Iron Pyrites, Galena, Zinc Blende, and Calcite. *Loc.* Golden Gate Reef, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 202, p. 15 (1905).

3516. ——. *Assoc.with* Native Silver, Galena, Iron Pyrites, Zinc Blende, Mispickel, Fluorspar, Calcite, and Siderite. *Loc.* In the mines along the Golden Gate Line of Reef and branch reefs, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 118 (1896).

3517. ——. *Assoc.with* Magnetite and Chlorite, in quartz. *Loc.* Iron Duke Reef, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 35, p. 9 (1887).

3518. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Iron Duke nad Nancy Lee Reefs, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 118, p. 12 (1896).

3519. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Nancy Lee Reef, Golden Gate (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 9 (1887), and 202, p. 26 (1905).

3520. ——. *Assoc.with* Iron Pyrites and Galena, in quartz reef. *Loc.* Australian Beauty Reef, Golden Valley, 12 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, pp. 40, 41 (1896), and G.S.M.

3521. ——. *Assoc.with* Iron Pyrites, Ironstone, and Galena, in quartz. *Loc.* King of Wallebadah Lease (410), Golden Valley (*ante*). *Ref.* G.S.Q. Pub. 118, p. 42 (1896), and G.S.M.

3522. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Lady Isabella Reef, Golden Valley (*ante*). *Ref.* G.S.M.

3523. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Belfast, Bell Bird, Carpentaria, Defiance, Don Juan, Grace Leigh, Hercules, Monkland, Perseverance, Queen of the Valley, Try It, Vasca de Gama, and Venture Reefs, Golden Valley (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 39-42 (1896).

3524. ——. In quartz. Highland Mary Reef, including Caledonia, Glengarry, Sir Garnet, and Archer Reefs, 1 mile S.E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, pp. 21-23 (1896).

3525. ——. *Assoc.with* Ironstone and Manganese dioxide, in quartz. *Loc.* Homeward Bound Reef, 4½ miles N.E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 10 (1887), and 118, p. 29 (1896).

3526. ——. In felsite and quartz. Pride of the Hills Reef, Homeward Bound Mg. Centre (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

3527. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* St. Patrick Reef, 35 chains N.N.E. of Croydon, Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

3528. ——. *Assoc.with* Zinc Blende, in quartz. *Loc.* Waterfall Reef, Homeward Bound Mg. Centre (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 10 (1887), and 118, p. 30 (1896).

3529. ——. *Assoc.with* Iron Pyrites, Galena, and Pyromorphite, in quartz. *Loc.* Billy Brown Reef, Mark Twain Centre, 5 miles E.N.E of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 46 (1896).

3530. Gold. *Assoc.with* Zinc Blende, in Quartz. *Loc.* Ironclad Reef, Mark Twain Centre (*ante*). *Ref.* G.S.Q. Pub. 118, p. 46 (1896), and G.S.M.

3531. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Mark Twain Reef, Mark Twain Centre (*ante*). *Ref.* G.S.Q. Pub. 118, p. 45 (1896).

3532. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* City of London Reef, on Moonlight Cr., 8 miles S.E.byE. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 26 (1896), and G.S.M.

3533. ——. In quartz. Moonstone Reef, Moonlight Cr., about 9 miles S.E.byE. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 26 (1896), and G.S.M.

3534. ——. *Assoc.with* Graphite in quartz. *Loc.* Elsie's Reef, Mt. Angus, 2 miles W. of Croydon; Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 24 (1896).

3535. ——. In quartz. Babe Reef, Mountain Maid Centre, 2¾ miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 28 (1896).

3536. ——. *Assoc.with* Chalcotrichite, Redruthite, Cerussite, Iron Pyrites, and Galena, in quartz. *Loc.* Mountain Maid Reef, Mountain Maid Centre (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 10 (1887), and 118, p. 28 (1896), and B.D.

3537. ——. In ironstone and quartz. Alabama Reef, Cork-tree Cr., 5 miles E.N.E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

3538. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Mulligan's P.A., Cork-tree Cr. (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

3539. ——. In quartz. Macarthur's Reef, Mulligan's Camp, 7 miles N.E.byE. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 44 (1896).

3540. ——. *Assoc.with* Galena, Anglesite, Massicot, and Ironstone, in quartz. *Loc.* Ace of Hearts Reef, Tabletop, 9 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 35 (1896).

3541. ——. *Assoc.with* Ironstone and Massicot. *Loc.* Comet Reef, Table Top (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

3542. ——. *Assoc.with* Cerussite, Pyromorphite, and Ironstone, in quartz. *Loc.* Federation Reef, Table Top (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

3543. ——. *Assoc.with* Iron Pyrites and Mispickel. *Loc.* Happy Jack Reef, Table Top (*ante*). *Ref.* G.S.Q. Pub. 118, p. 35 (1896).

3544. ——. *Assoc.with* Anglesite, Pyromorphite, and Massicot, in quartz. *Loc.* Hope Reef, Table Top (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

3545. ——. *Assoc.with* Massicot, in quartz. *Loc.* Independence and Glencoe Reefs, Table Top (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 37, 38 (1896), and G.S.M.

3546. ——. *Assoc.with* Pyromorphite and Massicot, in quartz, in felsite country. *Loc.* Mt. Morgan Reef, Table Top (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 118, p. 35 (1896).

3547. ——. In quartz. Day Dawn, Last Chance, Surprise, Ida, Break o' Day, Black Diamond, Bobby Dazzler, Gt. Eastern, and Confidence Reefs, Table Top (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 34-38 (1896).

3548. ——. *Assoc.with* Iron Pyrites, Massicot, Galena, Cerussite, and Pyromorphite. *Loc.* Reefs at Table Top (*ante*). *Ref.* G.S.Q. Pub. 118, p. 34 (1896).

3549. ——. *Assoc.with* Native Copper, in quartz leaders traversing graphitic granite. *Loc.* Lady Isabelle Reef, True Blue Mg. Centre, 1¾ mile N.W.byN. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, pp. 13, 14 (1896).

3550. ——. *Assoc.with* Iron Pyrites and Galena, in quartz reef. *Loc.* Lady Isabel 2 and 3 S. United Lease (566), True Blue Mg. Centre (*ante*). *Ref.* G.S.Q. Pub. 118, p. 14 (1896), and G.S.M.

3551. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* True Blue Reef, True Blue Mg. Centre (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 13-16 (1896).

3552. ——. In fossiliferous "Desert Sandstone." *Loc.* True Blue Hill, True Blue Mg. Centre (*ante*). *Ref.* G.S.M.

3553. ——. *Assoc.with* Galena and Cerussite. *Loc.* Jenny Lind Reef, Lower Twelve Mile, 2½ miles W. of Twelve Mile, 8 miles N. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 34 (1896).

3554. ——. *Assoc.with* Iron Pyrites and Galena, in quartz, serpentine, and graphite. *Loc.* Oriental and Gem Reefs, Lower Twelve Mile (*ante*). *Ref.* G.S.Q. Pub. 118, p. 33 (1896).

3555. ——. *Assoc.with* Galena, in quartz. *Loc.* Jubilee and President Reefs, Twelve Mile, 6 miles N. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, pp. 31, 32 (1896).

3556. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Rising Sun Reef, Twelve Mile (*ante*). *Ref.* G.S.Q. Pub. 118, p. 33 (1896), and G.S.M.

3557. ——. In quartz. Apex, Lady Lottie, Maybelle, Colleen Bawn, Golden Fleece, Ross-shire, Golden Spur Reefs, Twelve Mile (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 32, 33 (1896).

3558. ——. In quartz. Harp of Erin Reef, 2¼ miles E.byS. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 23 (1896).

3559. ——. *Assoc.with* Marcasite, in quartz reef. *Loc.* Problem Reef, 7 miles E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 46 (1896), and G.S.M.

3560. ——. In quartz. *Loc.* Welcome Reef, Croydon Goldfield (*ante*). *Ref.* G.S.M.

3561. ——. In quartz reef. Sneakaway Gully, Oxley Cr., Flinders R., 25 miles W. byN. of **Upper Cape Diggings,** 42 miles (by rail and road) W.byN. of Charters Towers. *Co.* Wongalee; *Dist.* Burke. *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

3561A. ——. *Assoc.with* Galena, Cerussite, and Massicot, in lode. *Loc.* Boulder Hill, Hill, Broken Hill, and Granite Castle Silver-Lead Lodes, Por. 2, Par. of Cracknell, Upper Flinders R., Mt. Emu Plain Stn., 62 miles N.N.E. of Hughenden, 55 miles N.W.byW. of Pentland Rail. Stn. (Northern line), *Co.* Wongalee (*ante*). *Ref.* (and *Assays*) Q.G.M.J., vol. 11, p. 136 (1910).

3561B. ——. *Assoc.with* Massicot, in quartz lode. *Loc.* Cargoon Holding, 2½ miles from Upper Flinders R., Por. 2, Par. of Cracknell, Diecan Claim, Mt. Emu Plains Stn. (*ante*). *Assay:* Gold = 88 oz.; Silver = 37 oz. per ton. *Ref.* A.R., p. 215 (1910).

3561C. ——. *Assoc.with* Iron Pyrites, in granite. *Loc.* Diecan Claim, Upper Flinders R., Por. 2, Par. of Cracknell, Mt. Emu Plains Stn. (*ante*). *Refs.* (and *Assays*) Q.G.M.J., vol. 11, p. 136 (1910), and A.R., pp. 257 (1910) and 307 (1911).

3562. ——. *Assoc.with* Galena, in quartz reef. *Loc.* Soap Spar Mine, Woolgar Goldfield, 97 miles (by coach) N. of Richmond Rail. Stn. (Gt. Northern line), 404 miles (by rail and road) W.byS. of Townsville. *Co.* Woolgar; *Dist.* Burke. *Ref.* G.S.Q. Pub. 125, p. 39 (1897), and G.S.M.

3563. ——. *Assoc.with* Silver, Galena, and Copper, in lodes. *Loc.* **Woolgar Goldfield** (*ante*). *Ref.* A.R.D.M., p. 42 (1886).

3563A. ——. In quartz. Reefs on the Woolgar Goldfield (*ante*). *Ref.* A.R.D.M., pp. 89-93 (1895).

3564. ——. Containing Silver, in quartz. *Loc.* All Nations Reef, Boolboonda Hill, 12 miles N.E. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 21, p. 13 (1886).

3565. ——. *Assoc.with* Copper Pyrites, in quartz reef in micaceous schist. *Loc.* Boolboonda Copper Lode, Boolboonda Hill (*ante*). *Ref.* G.S.Q. Pub. 21, p. 13 (1886), and G.S.M.

3566. ——. *Assoc.with* Copper Pyrites. *Loc.* New Moonta Mine, Boolboonda Hill (*ante*). *Ref.* G.S.M.

3567. ——. *Assoc.with* Silver, Iron Pyrites, Mispickel, Galena, and Zinc Blende. *Loc.* Allendale Silver Lode, Chowey Cr., 6 miles N.W. of Chowey Rail. Stn., 68 miles (by rail and road) W. of Maryborough. *Co.* Bowen; *Dist.* Burnett. *Assay:* Gold = 1 oz., Silver = 39 oz. per ton. *Ref.* G.S.Q. Pubs. 21, p. 12 (1885), 25, p. 3 (1886), and P.R.S.Q., vol. 4, p. 3 (1887).

3568. ——. *Assoc.with* Iron Pyrites, Lead, Silver, and Magnetite. *Loc.* Hannan's Silver-Lead Lode, Chowey Cr. (*ante*). *Yield:* Lead = 50 per cent.; Silver = 30 oz. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

3569. ——. *Assoc.with* Molybdenite, in quartz reef. *Loc.* Lady Florence Mine, Chowey Cr. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 35 (1897).

3570. ——. *Assoc.with* Ironstone and Manganese-dioxide, in quartz reef and in felsite. *Loc.* Mt. Melville, Chowey Cr. (*ante*). *Assay:* Gold = 16 dwt; and Silver = 6 oz. per ton. *Ref.* G.S.Q. Pub. 25, p. 3 (1886), and G.S.M.

3571. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Mispickel. *Loc.* Mt. Ophir Mine, Mt. Ophir, Chowey Cr. (*ante*). *Ref.* A.R., pp. 52, 158 (1908).

3572. ——. *Assoc.with* Molybdenite, Iron Pyrites, and Ironstone, in quartz. *Loc.* White's Reef, Mt. Ophir, Chowey Cr. (*ante*). *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

3573. Gold. *Assoc.with* Molybdenite and Molybdite, in quartz reefs. *Loc.* Old Chowey Mine, **Chowey Goldfield,** 6 miles N. of Didcot Rail. Stn. (Gayndah line), 74 miles (by rail and road) W. of Maryborough. *Co.* Bowen (Cook ?); *Dist.* Burnett. *Ref.* G.S.Q. Pub. 25, p. 4 (1886), and G.S.M.

3574. ——. *Assoc.with* Silver and Iron Pyrites. *Loc.* **Gaeta Goldfield,** 30 miles N. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* Burnett. *Assay:* Gold = 7 oz. 2 dwt.; Silver = 1 oz. 16 dwt. per ton. *Ref.* A.R., p. 86 (1907).

3574A. ——. *Assoc.with* Iron Pyrites, in quartz. Pioneer and East Yorkshire Reefs, Gaeta Goldfield (*ante*). *Average Yield:* Gold = 15 to 18 dwt. *Ref.* Q.G.M.J., vol. 4, p. 298 (1903).

3575. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Mispickel, in felsite. *Loc.* Achillea Mine, Yarrabil Cr., **Gebangle Goldfield,** 12 miles N.W. of Degilbo Rail. Stn (Gayndah line), 70 miles (by rail and road) W. of Maryborough. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. 5 (1890), and G.S.M.

3576. ——. *Assoc.with* Iron Pyrites and Mispickel, in decomposed porphyry. *Loc.* Gebangle P. Claim, Gebangle Goldfield (*ante*). *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

3576A. ——. In quartz. Homeward Bound Reef, Yarrabil Cr., Gebangle Goldfield (*ante*). *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

3577. ——. *Assoc.with* Iron Pyrites and Copper carbonate, in quartz reef. *Loc.* Lady Francis Mine, Yarrabil Cr., Gebangle Goldfield (*ante*). *Yield:* Gold = 2 oz. per ton. *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

3578. ——. *Assoc.with* Iron Pyrites, in volcanic agglomerate and breccia. *Loc.* Lord Nelson Mine, Yarrabil Cr., Gebangle Goldfield (*ante*) *Ref.* G.S.Q. Pub. 60, p. 5 (1890), and G.S.M.

3579. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Mt. Allen Mine, Gebangle Goldfield (*ante*). *Average Assays:* Gold = 2 oz. 14 dwt. 11 gr.; Silver = 2 oz. 2 dwt. per ton. *Ref.* G.S.Q. Pub. 60, p. 4 (1890).

3580. ——. *Assoc.with* Ironstone, in bluish sandstone. *Loc.* Pride of Gebangle Goldfield (*ante*). *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

3581. ——. *Assoc.with* Iron Pyrites and Copper carbonate, in quartz leader. *Loc.* Victoria Mine, Gebangle Goldfield (*ante*). *Ref.* G.S.Q. Pub. 60, p. 4 (1890).

3582. ——. *Assoc.with* Iron Pyrites, Magnetite, and Hornblende, in quartz reef. *Loc.* Great Freehold Mine, Rocky Cr., Mt. Drain Diggings, nr. Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.M. and Q.M.

3583. ——. *Assoc.with* Silver and Copper carbonate. *Loc.* Harper's Hill, Mt. Drain Diggings (*ante*). *Ref.* G.S.Q. Pub. 125, p. 27 (1897).

3584. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in lode. *Loc.* Canterbury Copper Mine, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and G.S.M.

3585. ——. *Assoc.with* Copper Pyrites, Cuprite, Chalcotrichite, Tile Ore, Iron Pyrites, Zinc Blende, and Calcite, in lode. *Loc.* Mt. Perry Copper Mine, Mt. Perry (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and G.S.M.

3586. ——. *Assoc.with* Silver and Mispickel, in quartz. *Loc.* 3 miles S. of Mt. Perry, on Eidsvold Road. *Co.* Bowen; *Dist.* Burnett. *Ref.* A.R., p. 158 (1908).

3587. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Molangul Reef, about 5 miles S.S.W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* G.S.M.

3588. ——. *Assoc.with* Iron Pyrites and Magnetite, in quartz reef. *Loc.* Mt. Webster, nr. Mt. Perry. *Co.* Bowen (*ante*). *Ref.* G.S.M.

3589. ——. *Assoc.with* Iron Pyrites and Molybdenite, in quartz reef. *Loc.* P. Areas, Perry Scrub, St. Agnes Cr., Perry R., 15 miles S of Gin Gin Rail. Stn. (Bundaberg-Mt. Perry line), 44 miles (by rail and road) S.W. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 184 (1903).

3590. ——. In quartz reef. Bennett's Mine, **Reid's Creek Goldfield,** 4½ miles S.W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* G.S.M.

3591. ——. *Assoc.with* Mispickel, Iron Pyrites, Galena, Stibnite, and Zinc Blende, in quartz and felspar lodes. *Loc.* Reid Cr. Reefs, Reid Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885), A.R.D.M., p. 34 (1894).

3592. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz and calcite reef *Loc.* Caledonia Reef, Reid's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 21, p. 11 (1885), 125, p. 28 (1897).

3593. ——. *Assoc.with* Iron Pyrites, Mispickel, Galena, and Zinc Blende, in quartz. *Loc.* California Reef, Reid's Creek Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885), and G.S.M.

3594. ——. *Assoc.with* Iron Pyrites, Mispickel, Galena, and Stibnite. *Loc.* Lady Norman and Reid's Cr. Mines, Reid's Cr. Goldfield (*ante*). *Ref.* A.R.D.M., p. 34 (1894).

3595. ——. *Assoc.with* Copper Pyrites and Molybdenite, in small quartz lodes in granite country. *Loc.* Globe Copper Mine, Wolca, 6 miles N. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* Burnett. *Assay: See* No. 2130. *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and B.D.

3596. ——. *Assoc.with* Copper Pyrites and Oxidised Copper Ores. *Loc.* Wonbah Hill, 12 miles N.byW. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* G.S.M. and A.R., p. 303 (1911).

3596A.——. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in lode. *Loc.* nr. Wonbah Hill Mine, 2 miles from Wonbah Siding (Mt. Perry line), 60 miles (by rail and road) S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* A.R., p. 264 (1910).

3597. ——. *Assoc.with* Iron Pyrites, Hematite, Magnetite, Mispickel, Native Bismuth, Bismite, Bismuthinite, Bismutite, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, Chalcedony, and Epidote, in veins of calcite, slate, and hornblende. *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Yields:* Gold = 1 to 4 oz. per ton; Bismuth = 10 per cent. *Ref.* G.S.Q. Pubs. 60, p. 2 (1890), 125, p. 23 (1897), and 173, pp. 1-5 (1902).

3598. ——. *Assoc.with* Iron Pyrites and Magnetite, in quartz and calcite. *Loc.* Mt. Hastings, Biggenden Cr., 2 miles S.E. of Mt. Biggenden, 5 miles S.byW. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 60, p. 4 (1890).

3599. ——. *Assoc.with* Silver, Iron Pyrites, Mispickel, Pyrrhotite, Copper Pyrites, Cuprite, Malachite, Tenorite, Bismuthinite, Zinc Blende, Hematite, and Calcite, in quartz lode. *Loc.* Commonwealth Mine, Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 185, p. 6 (1903), and 207, pp. 14-19 (1907).

3600. ——. *Assoc.with* Silver, Iron Pyrites, Native Bismuth, Bismuthinite, Copper Pyrites, Mispickel, Magnetite, and Ironstone, in lode. *Loc.* Don Jon Bismuth Mine, ¼-mile S. of Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Assay:* Gold = 2 dwt.; Silver = 2 oz. per ton; Bismuth = 4½ per cent. *Ref.* G.S.Q. Pubs. 173, p. 4 (1902), and 207, pp. 13, 14 (1907.

3601. ——. *Assoc.with* Bismuth. *Loc.* Don Jon Bismuth Mine (*ante*). *Assay:* Bismuth = 12·4 per cent.; Gold = 12 dwt. 19 gr. per ton. *Ref.* A.R., p. 62 (1906.

3602. ——. *Assoc.with* Bismuth. *Loc.* Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Assay:* Bismuth = 12·3 per cent.; Gold = 8 dwt. 9 gr. per ton. *Ref.* A.R., p. 60 (1906).

3603. ——. *Assoc.with* Iron Pyrites, Mispickel, Bismuthinite, and Bismutite, in brecciated formation. *Loc.* Kent's Knob Mine, ¼-mile N. of Mt. Shamrock, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 25, p. 2 (1886), and B.D.

3604. —— (wire). *Assoc.with* Tetradymite, in calcite. *Loc.* Mt. Shamrock Gold Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* B.D.

3605. ——. *Assoc.with* Bismite and Earthy Hematite. Mt. Shamrock Mine (*ante*). *Assay:* Gold = 252 oz. per ton; Bismuth = 62 per cent. *Ref.* G.S.Q. Pub. 25, p. 1 (1886), P.R.S.Q., vol. 4, p. 39 (1887), and G.S.M.

3606. ——. *Assoc.with* Telluride of Gold, Copper Pyrites, Malachite, Native Bismuth, Bismuthinite, Joseite, Molybdenite, Zinc Blende, Mispickel, and Calcite, in volcanic tuff, syenite, trachyte, and breccia. *Loc.* Mt. Shamrock Mine (*ante*). *Ref.* G.S.Q. Pubs. 60, p. 6 (1890), 168 (1901).

3606A.——. *Assoc.with* Molybdenite and Molybdite, in quartz reef. *Loc.* Venus Mine, Mt. Steadman, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.M.

3607. ——. *Assoc.with* Molybdenite, in quartz reef. *Loc.* Mt. Steadman (*ante*). *Ref.* G.S.M.

3608. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Berrie-Paterson, **Paradise Goldfield,** 2 miles below Yarrabil Cr., 8 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 68, p. 1 (1891).

3609. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Bushnell's Advance P.A., Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 3 (1891).

3610. Gold. In quartz reef. Gt. Eastern Mine, Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 2 (1891).

3611. ——. In quartz reef. Horse Shoe Bend Mine, Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 2 (1891).

3612. ——. In quartz reef. Lady Jane P.A., Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 3 (1891).

3613. ——. In quartz reef. Lady Margaret Mine, Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 3 (1891).

3614. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Leishman's William Tell Mine, Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 3 (1891).

3615. ——. *Assoc.with* Ironstone, in quartz reef. *Loc.* Neill's Paradise Mine, Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 3 (1891).

3616. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Nil Desperandum P.A., Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 3 (1891).

3617. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Norris's Mine, Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 2 (1891).

3618. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* P.A. (261), Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 3 (1891).

3619. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz reef. *Loc.* Paradise P.C., Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 1 (1891).

3620. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Philadelphia Mine, Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 3 (1891).

3621. ——. *Assoc.with* Ankerite, in lode. *Loc.* Girl-I-Left-Behind-Me Mine, Stony Cr., **Stanton-Harcourt Diggings,** 11 miles N. of Degilbo Rail. Stn., 69 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 168, p. 2 (1901).

3622. ——. *Assoc.with* Silver, Iron Pyrites, Galena, Zinc Blende, and Calcite, in quartz reef. *Loc.* Stanton Harcourt Diggings (*ante*). *Ref.* G.S.Q. Pubs. 25, p. 4 (1887), and 168, p. 2 (1901).

3623. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Young Australia Gold Mine, 53v, Woowoonga, 5 miles (by road) N.W. of Biggenden Rail. Stn., 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 185, pp. 3, 4 (1903).

3624. ——. *Assoc.with* Mercury, in quartz reef. *Loc.* Duffer Diggings, Gobango Cr., 16 miles S.E.byS. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 28, p. 4 (1886).

3624A. ——. In quartz. Golden Pile Shaft, **Nanango Goldfield,** 135 miles (by rail) S.S.W. of Maryborough. *Co.* Fitzroy (*ante*). *Ref.* G.S.Q. Pub. 169, p. 14 (1901).

3624B. ——. In quartz. Hooper's Luck Shaft, Nanango Goldfield (*ante*). *Ref.* L.Bs. 6, p. 788 (1900), 7, p. 48 (1901), and G.S.Q. Pub. 169, pp. 13, 14 (1901).

3624C. ——. In quartz. Golden Pile Shaft, Nanango Goldfield, 135 miles (by rail) *Ref.* L.Bs. 6, p. 788 (1900), 7, p. 48 (1901), and G.S.Q. Pub. 169, pp. 13, 14 (1901).

3625. ——. *Assoc.with* Calcite, in quartz. *Loc.* Black Watch Reef, Scrub Paddock Diggings, 13 miles N.E. of Nanango, 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 29 p. 3 (1886).

3625A. ——. *Assoc.with* Iron Pyrites and Hematite, in quartz reef. *Loc.* ½-mile E. 30° N. of Black Watch Reef, Scrub Paddock Diggings (*ante*). *Ref.* G.S.Q. Pub. 29, p. 4 (1886).

3626. ——. *Assoc.with* Copper and Iron Pyrites, in quartz. *Loc.* Wild Horse Reef, Scrub Paddock Diggings (*ante*). *Ref.* G.S.Q. Pub. 29, p. 3 (1886).

3627. ——. *Assoc.with* Malachite, in decomposed felspar porphyry. *Loc.* Branches of Sandy Cr., trib. of Baramba Cr., Ban Ban, 16 miles S.E. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* Burnett. *Assay:* 1 oz. 6 dwt. per ton. *Ref.* P.R.S.Q., vol. 4, pp. 38, 70 (1887).

3628. —— containing Silver, in lode *Loc.* nr. Bin Bin Range, 2 miles S. of Mt. Shamrock [*sic.*], 12 miles S.E. of Gayndah Rail. Stn. *Co.* Mackenzie (*ante*). *Assays:* (1) Gold = 7 dwt. and 2 oz. 5 dwt. 17 gr.; Silver = 30 oz. and 204 oz. per ton. (2) Gold = 10 dwt. 21 gr.; Silver = 40 oz. 5 dwt. 12 gr. per ton. *Ref.* G.S.Q. Pub. 60, p. 6 (1890).

3628A. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, Zinc Blende, and Calcite, in ironstone lode. *Loc.* Ban Ban Station, 12 miles S.E.byE. of Gayndah Rail. Stn. *Co.* Mackenzie (*ante*). *Ref.* A.R., p. 179 (1909).

3629. ——. *Assoc.with* Silver, in quartz. *Loc.* British Empire Mine, between Murderer's and Bennett's Gullies, 14 miles W.byS. of Gayndah Rail. Stn. *Co.* Mackenzie (*ante*). *Ref.* A.R., p. 120 (1907).

3630. ——. *Assoc.with* Silver, Iron Pyrites, and Mispickel, in quartz. *Loc.* Auburn Falls Gold Mine, Cadarga Cr., Auburn R., 32 miles W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. *Ref.* Q.G.M.J., vol. 5, pp. 162, 163 (1904), and G.S.Q. Pub. 207, p. 11 (1907).

3630A. ——. *Assoc.with* Iron Pyrites, Mispickel, Limonite, and Manganese-dioxide, in quartz. *Loc.* Cadarga Cr. Gold Mines, between Cadarga Cr. and Auburn R., 33 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle (*ante*). *Ref.* Q.G.M.J., vol. 5, pp. 162, 163 (1904), and G.S.Q. Pub. 207, p. 11 (1907).

3631. ——. *Assoc.with* Kaolin, in quartz reef. *Loc.* Dykehead Gold Mine, Deloura Cr., Auburn R., 11 miles from Dykehead Stn., 35 miles W.byS. of Gayndah Rail. Stn. *Co.* Newcastle (*ante*). *Ref.* G.S.Q. Pub. 207, p. 12 (1907).

3632. ——. *Assoc.with* Malachite, Chrysocolla, and Jasper, in quartz. *Loc.* F. Achilles Mine, Brovinia Goldfield, nr. Hawkwood, 50 miles S.W. of Gayndah Rail. Stn. *Co.* Newcastle (*ante*). *Assay:* Gold = 34 oz., Silver 13½ oz. per ton. *Ref.* G.S.Q. Pub. 114, p. 3 (1896), and G.S.M.

3633. ——. In quartz and calcite. *Loc.* May Queen Reef, **Brovinia Goldfield** (*ante*). *Ref.* G.S.Q. Pub. 114, p. 3 (1896).

3634. ——. In ferruginous quartz. Owen Macdonnell's Reef, Brovinia Goldfield (*ante*). *Ref.* G.S.Q. Pub. 114, p. 3 (1896).

3635. ——. In quartz. Burnett Squatter Reef, **St. John's Creek Goldfield,** 16 miles S.W. of Eidsvold. *Co.* Wicklow; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 207; p. 13 (1907).

3636. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* All Nations P.C. (All Nations Reef), **Eidsvold Goldfield,** 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 43, p. 4 (1889).

3637. ——. *Assoc.with* Iron Pyrites, Mispickel, and Galena, in quartz reef. *Loc.* Cosmopolitan Lease (42), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 102, p. 3 (1895).

3638. ——. In quartz. Craven Extd G.M.L. (93), Craven Reef, Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 160, p. 5 (1901), and G.S.M.

3638A. ——. In quartz. Golden Crown P.C. (Golden Crown Reef), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 160, p. 12 (1901).

3639. ——. *Assoc.with* Limonite, in quartz reef. *Loc.* Golden Spur P.A., Golden Spur Reef (2), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, p. 3 (1884).

3640. ——. In quartz. Lady Alma Reef, Eidsvold Goldfield (*ante*). *Ref.* G.S.M.

3641. ——. *Assoc.with* Cuprite, Hematite, and Stibnite, in quartz reef. *Loc.* Lady Augusta Lease (45), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 102, p. 4 (1895), and 160, pp. 6-11 (1901).

3642. ——. In quartz reef. Lady Minerva G.M.L. (68), Maid of Erin Reef, Eidsvold Goldfield. *Ref.* G.S.Q. Pubs. 102, p. 3 (1895), 160, p. 13 (1901).

3643. ——. *Assoc.with* Malachite, in quartz. *Loc.* Lady Rose Lease, Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 160, p. 12 (1901).

3644. ——. *Assoc.with* Copper carbonate and Bismite, in quartz reef. *Loc.* Maid of Erin Claim (Tunnel Reef), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 43, p. 3 (1887), and 125, p. 37 (1897).

3645. ——. *Assoc.with* Molybdenite, in quartz. *Loc.* Moonlight Reef, Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, p. 5 (1887).

3646. ——In quartz reef. Mountain Maid Mine, Eidsvold Goldfield (*ante*). *Ref.* G.S.M.

3647. ——. *Assoc.with* Iron Pyrites, Mispickel, and Zinc Blende, in quartz reef. *Loc.* Mt. Rose P.C. (Mt. Rose Reef), Eidsvold Goldfield (*ante*). *Ref.* G.S.M.

3648. ——. *Assoc.with* Iron Pyrites and Zinc Blende, in quartz and calcite. *Loc.* Mt. Rose 1 West Lease (41), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 102, p. 2 (1895).

3649. ——. In quartz. Mt. Rose 2 W., 3 W., and 1 E. Mines (Mt. Rose Reef), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, pp. 2, 3 (1887).

3650. ——. *Assoc.with* Iron Pyrites, Ironstone, and Galena, in quartz reef. *Loc.* Mt. Rose United Mine (Mt Rose Reef), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, p. 2 (1887).

3651. ——. In quartz. Mt. Rose and Stockman Junction Lease (25), Mt. Rose Reef, Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 102, p. 2 (1895).

3652. Gold. In flat quartz reefs, in granitic formation. *Loc.* New Heights of Alma Lease (30), Maid of Erin and Mt. Rose Reefs, Eidsvold Goldfield (*ante*). *Yield:* Gold = 1 oz. 5 dwt. to 6 oz. per ton. *Ref.* G.S.Q. Pubs. 102, p. 3 (1895), and 160, p. 11 (1901).

3653. ——. In quartz. Stockman Amalgamated Mines (Stockman Reef), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, pp. 4, 5 (1887).

3654. ——. *Assoc.with* Stibnite. *Loc.* Reef, S. of Stockman Mine, Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, p. 4 (1887).

3655. ——. *Assoc.with* Iron Pyrites, Redruthite, Anglesite, and Zinc Blende, in quartz reef. *Loc.* United Victory Lease (33), Maid of Erin Reef, Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 103, p. 3 (1895).

3656. ——. *Assoc.with* Mispickel and Galena, in quartz reef. *Loc.* East side of Burnett R., Eidsvold Goldfield. *Ref.* G.S.Q. Pub. 43, p. 5 (1887).

3657. ——. *Assoc.with* Silver, Iron Pyrites, and Limonite, in quartz. *Loc.* Apple-tree Lease, Cabbage-tree Cr., Mt. Cannindah, 40 miles S.W. of Miriam Vale Rail. Stn. (North Coast line), 83 miles (by rail and road) S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. *Assay:* Gold = 1 oz. 4 dwt. 19 gr., Silver = 24 oz. 6 dwt. 2 gr. per ton. *Ref.* G.S.Q. Pubs. 113, p. 9 (1896), and 143, p. 4 (1899).

3658. ——. *Assoc.with* Silver, in quartz reef. *Loc.* Little Wonder Mine, Mt. Cannindah (*ante*). *Assays:* (1) Gold = 13 dwt. 17 gr., Silver = 12 dwt. 20 gr. per ton. (2) Gold = 1 oz. per ton. *Ref.* G.S.Q. Pub. 113, p. 9 (1896).

3659. ——. *Assoc.with* Silver, Native Copper, Cuprite, Tenorite, Azurite, and Malachite, in lode. *Loc.* Mt. Cannindah Mine, Mt. Cannindah (*ante*). *Ref.* (and *Assays*) G.S.Q. Pubs. 105, pp. 6, 7, 113, p. 7 (1896).

3660. ——. In quartz reef. P.A., Mt. Flori, Bania Range, 17 miles N.N.W. of Mt. Perry. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 143, p. 23 (1899).

3660A. ——. In quartz. Mayer's Reef, Horse Creek, about 38 miles N.W. of Coen. *Co.* Archer; *Dist.* **Cook.** *Ref.* A.R.D.M., p. 59 (1910), and Q.G.M.J., p. 603 (1910).

3661. ——. In quartz. Perseverance Reef, Potallah Cr., 25 miles W.N.W. of Alice Goldfield, 50 miles S.S.W. of Yarraden **(Hamilton Goldfield).** *Co.* Balurga; *Dist.* Cook. *Ref.* G.S.Q. Pub. 209, p. 20 (1907).

3662. ——. *Assoc.with* Stibnite, in quartz reef. *Loc.* First Call P. Claim, Cocoa Cr., trib. of McIvor R., 33 miles N.N.W. of Cooktown. *Co.* Banks; *Dist.* Cook. *Assays:* (1) Gold = 12 oz. 15 dwt. 21 gr. per ton; Antimony = 75 per cent. (2) Gold = 11 oz. 12 dwt. per ton; Antimony = 65 per cent. *Ref.* G.S.Q. Pubs. 91, p. 4 (1893), 94, p. 10 (1893), 209, p. 7 (1907), and 223, pp. 23, 24 (1909).

3663. ——. *Assoc.with* Stibnite, in quartz. *Loc.* First Call 1 S.E. Mine (*ante*). *Ref.* G.S.Q. Pubs. 91, p. 4 1893), 94, p. 10 (1893), 209, p. 7 (1907), and 223, pp. 23, 24 (1909).

3664. ——. In quartz. Boomerang Reef, Munburra, 40 miles N.N.W. of Cooktown, **Starcke Goldfield.** *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 209, p. 8 (1907), and 223, pp. 18-23 (1909).

3665. ——. In quartz. Duke of York Lease (7), Munburra (*ante*). *Ref.* G.S.Q. Pub. 223, p. 25 (1909).

3666. ——. In quartz. Gold Mount Lease (20), Munburra (*ante*). *Ref.* G.S.Q. Pub. 223, p. 25 (1909).

3667. ——. *Assoc.with* Silver and Iron Pyrites, in quartz. *Loc.* Last Hit Reef, Munburra (*ante*). *Assay:* Gold = 1 oz. 12 dwt. per ton; Silver = 5 dwt. per ton. *Ref.* A.R., p. 63 (1906), and G.S.Q. Pubs. 209, p. 9 (1907), 223, pp. 31-36 (1909).

3667A. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Monte Carlo (Sea View) Mine, Munburra (*ante*). *Ref.* G.S.Q. Pub. 223, p. 37 (1909).

3667B. ——. In quartz. Queen Alexandra Reef, Munburra (*ante*). *Ref.* G.S.Q. Pub. 223, p. 25 (1909).

3667C. ——. In quartz. Rio Tinto Claim, Starcke Consols Lease (23), Munburra (*ante*). *Ref.* G.S.Q. Pub. 223, p. 25 (1909).

3667D. ——. *Assoc.with* Mispickel, in quartz. *Loc.* St. Patrick Workings (Starcke Consols Lease), Munburra (*ante*). *Ref.* G.S.Q. Pub. 223, p. 41 (1909).

3667E. ——. In quartz. Starcke Consols Lease (23), *includes* Dyer's, St. Patrick, Rio Tinto, La France, Weir's, Slattery's, and Poor Old Torres Workings and Claims, Munburra (*ante*). *Ref.* G.S.Q. Pub. 223, pp. 42-44 (1909), and A.R., p. 283 (1910).

3667F. ——. *Assoc.with* Silver, in quartz. *Loc.* Gladstone Reef, 4 miles N. of Munburra, 44 miles N.N.W. of Cooktown, Starcke Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 209, pp. 9, 10 (1907), 223, pp. 27-29 (1909), and A.R., p. 63 (1906).

3667G. ——. *Assoc.with* Stibnite and Cervantite, in quartz reef. *Loc.* Starcke Goldfield, 40 miles N.N.W. of Cooktown. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 31 (1897), and G.S.M.

3668. ——. *Assoc.with* Tetrahedrite, Tile Ore, Azurite, Malachite, Chalcanthite, and Ironstone, in lodes, in gneiss and schist. *Loc.* Arbouin Mines, nr. Nondah Cr. and Walsh R., 18 miles W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, pp. 13, 14 (1898).

3669. ——. *Assoc.with* Orthoclase, Biotite, and Quartz, in pegmatite. *Loc.* Golden Treasure Mine, 2 miles W. of Tate Tel. Stn., Tate R., about 34 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 119, p. 41 (1897), and P.R.S.Q., vol. 15, p. 49 (1900).

3670. ——. In quartz. Last Chance Reef, Jessop's Hill, 4 miles N. of Maytown, 32 miles S. of Laura Rail. Stn. (Cooktown line), 99 miles (by rail and road) S. byW. of Cooktown, **Palmer Goldfield.** *Co.* Chelmsford; *Dist.* Cook. *Average Yield:* Gold = 2 oz. 13 dwt. 12 gr. per ton. *Ref.* G.S.Q. Pub. 144, p. 3 (1899).

3671. ——. In quartz. Sunburst Reef, Jessop's Hill (*ante*). *Average Yield* = 2 oz. 11 dwt. 2 gr. per ton. *Ref.* G.S.Q. 144, p. 3 (1899).

3672. ——. In quartz. Difficulty, Downpatrick, General Sarsfield, Prince Patrick, St. Patrick, and Trieste Reefs, Jessop's Hill (*ante*). *Ref.* G.S.Q. Pub. 144, pp. 4, 5 (1899).

3672A. ——. *Assoc.with* Hematite, in quartz reef. *Loc.* Anglo Saxon 1 W. Mine, Limestone, 60 miles S. of Laura Rail. Stn., Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.Q. Pub. 46, p. 1 (1889).

3673. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Anglo-Saxon Reef, Limestone (*ante*). *Ref.* G.S.Q. Pubs. 46, p. 1 (1889), 123, p. 7 (1897), and 144, p. 15 (1899).

3674. ——. *Assoc.with* Mispickel, in quartz. *Loc.* German Miner Reef, Limestone (*ante*). *Ref.* G.S.Q. Pub. 46, p. 2 (1889).

3675. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Good Hope Reef, Limestone (*ante*). *Ref.* G.S.Q. Pub. 46, p. 2 (1889).

3676. ——. In quartz. North Cross Reef, Limestone (*ante*). *Ref.* G.S.Q. Pubs. 46 (1889), 144 (1899).

3677. ——. *Assoc.with* Manganese-dioxide, in quartz. *Loc.* South Cross Reef, Limestone (*ante*). *Ref.* G.S.Q. Pubs. 46, p. 1 (1889), 144, p. 15 (1899).

3678. ——. In quartz. Catalpa, Comet, Mountain Maid, Queen, St. Patrick, and Viking Mines, Maytown, Palmer Goldfield, 36 miles S. of Laura Rail. Stn., 103 miles (by rail and road) S.byW. of Cooktown (Cooktown line). *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.Q. Pub. 123, p. 7 (1897).

3679. ——. In quartz. Alexandra, Helen MacGregor, Queen of Beauty, and Rob Roy Reefs, Maytown (*ante*). *Ref.* G.S.Q. Pub. 144, pp. 12, 13 (1899).

3680. ——. In quartz Anti-Clique, Ida, Just-in-Time, King of the Ranges, Louisa, Recompense, and Union Reefs (Ida Group), Maytown (*ante*). *Ref.* G.S.Q. Pub. 144, pp. 7-11 (1899).

3681. ——. In quartz. Captain Cook, Mountain Maid, Queen of the North, Smithfield, and Viking Reefs (Queen Group), Maytown (*ante*). *Ref.* G.S.Q. Pub. 144, pp. 11, 12 (1899).

3682. ——. In quartz. Baal Gammon, Best Friend, Wild Irish Girl, and Native Girl Reefs (Cradle Cr. Group), Maytown (*ante*). *Ref.* G.S.Q. Pub. 144, pp. 6, 7 (1899).

3683. ——. In quartz. Isabella, Gilbert, Monte Christo, and Norton Reefs, Normanby, 40 miles S.S.W. of Cooktown, Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.Q. Pub. 144, p. 16 (1899).

3683A. ——. In quartz. Gypsy Reef, left-hand br. of Palmer R., 3¼ miles N.N.E. of Maytown, Palmer Goldfield (*ante*). *Ref.* G.S.Q. Pub. 144, p. 5 (1899).

3684. ——. In quartz. Independent Reef, left-hand br. of Palmer R., 5 miles N.E. byN. of Maytown (*ante*). *Ref.* G.S.Q. Pub. 144, p. 5 (1899).

3685. ——. In quartz. MacPherson Reef, left-hand br. of Palmer R., 3¼ miles N.N.E. of Maytown (*ante*). *Ref.* G.S.Q. Pub. 144, p. 5 (1899).

3686. ——. In quartz. Star of the South Reef, left-hand br. of Palmer R., 2¼ miles N.byE. of Maytown (*ante*). *Ref.* G.S.Q. Pub. 144, p. 5 (1899).

3687. Gold. In quartz. Walhalla Reef, left-hand br. of Palmer R., 5 miles N.E.byN. of Maytown (*ante*). *Ref.* G.S.Q. Pub. 144, p. 5 (1899).

3688. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Mt. Buchanan, Oakey Cr., 13 miles S.E.byS. of Maytown, Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Ref* G.S.Q. Pub. 123, p. 8 (1897).

3689. ——. *Assoc.with* Ironstone and Mispickel, in quartz. *Loc.* Mt. Madden, Oakey Cr., 13 miles S.E.byS. of Maytown (*ante*). *Assay:* Gold = 18 dwt. 7 gr., Silver = 1 dwt. 7 gr. per ton. *Ref.* G.S.Q. Pubs. 108, p. 11 (1896), and 123, p. 8 (1897).

3690. ——. In quartz reef. Oakey Cr., 12 miles S.E.byS. of Maytown (*ante*). *Ref.* A.R., pp. 161, 162 (1908).

3691. ——. In quartz. Boolay's P.P.A. (268) and Howe's P.P.A. (267), Mingin Cr., 9 miles N. of Maytown, Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 123, p. 7 (1897), 144, p. 6 (1899).

3692. ——. In quartz reef. Abdalla Mine, **Coen Goldfield,** 45 miles (by road) N.N.W. of Port Stewart, 189 miles N.W. of Cooktown. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 19 (1901).

3693. ——. *Assoc.with* Iron Pyrites, Fluorspar, Calcite, and Pinite, in quartz reef. *Loc.* Daisy Mine, Coen Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 20 (1901), and G.S.M.

3694. ——. In quartz reef. Great Northern P.C., Coen Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 163, p. 20 (1901), 209, pp. 20, 21 (1907).

3695. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Llankelly Mine, Coen Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 22 (1901).

3696. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Long Tunnel Mine, Coen Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 21 (1901).

3697. ——. In quartz reef. Stockholm Mine, Coen Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 19 (1901), and G.S.M.

3698. ——. In quartz reef. Victoria Mine, Coen Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 125, p. 30 (1897), and 163, p. 19 (1901).

3699. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Wilson Mine, Coen Goldfield (*ante*). *Ref.* G.S..Q Pub. 163, p. 19 (1901).

3700. ——. *Assoc.with* Iron Pyrites and Hematite, in quartz. *Loc.* All Nations Reef, Ebagoolah, **Hamilton Goldfield,** 33 miles W. of Port Stewart, 173 miles N.W. byN. of Cooktown. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 5 (1901).

3701. ——. In quartz. Caledonia Reef, Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 163, p. 6 (1901), 209, pp. 16, 17 (1907).

3702. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Gold Mount Reef, 6 miles S.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 163, pp. 8, 9 (1901), and 209, p. 15 (1907).

3703. ——. In quartz. Hamilton King Reef, Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 163, p. 10 (1901), and 209, p. 16 (1907).

3704. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Hidden Treasure Reef, Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 209, p. 18 (1907).

3705. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Johannesburg (Lord Roberts) Line of Reefs, 3½ miles S.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 7 (1901).

3706. ——. *Assoc.with* Graphite, in quartz. *Loc.* May Queen Line of Reef, 1½ mile S.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 163, p. 12 (1901), and 209, p. 17 (1907).

3707. ——. *Assoc.with* Limonite and Copper carbonate, in quartz. *Loc.* Trafalgar Reef, 3½ miles S.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, pp. 13, 14 (1901).

3708. ——. In quartz. Violet Reef, 7 miles S. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 209, p. 19 (1907).

3709. ——. In quartz. Agnes, Brilliant, Croydon King, Democrat, Good Luck, Golden Treasure, Hit or Miss, Kruger, Last Hit, Luck of Fortune, Oom Paul, Queenslander, Star of Hope, Tasmania, and True Blue Lines of Reefs, Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, pp. 4-14 (1901).

3710. ——. *Assoc.with* Talc, in quartz vein, in garnet schist. *Loc.* 1 mile N.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.M.

3710A. ——. In quartz. Golden King Reef, Yarraden, 14 miles S. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 209, pp. 12-14 (1907).

3711. ——. *Assoc.with* Graphite, in quartz. *Loc.* Lukin King Reefs, Yarraden (*ante*). *Ref.* G.S.Q. Pub. 209, p. 14 (1907).

3712. ——. In quartz. Savannah Reef, Yarraden (*ante*). *Ref.* G.S.Q. Pub. 209, p. 14 (1907).

3712A.——. In quartz. Lochinvar Prov. Goldfield, 43 miles W.byN. of Port Stewart. *Co.* Coen; *Dist.* Cook.

3713. ——. *Assoc.with* Iron Pyrites and Hematite, in quartz. *Loc.* B.B. Reef, McLeodsville, 6 miles N.N.W. of Thornborough, 25 miles N. of Dimbullah Rail. Stn. (Chillagoe line), 98 miles (by rail and road) W. of Cairns. *Co.* Dagmar; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 26 (1884).

3714. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Galena, in quartz. *Loc.* Victory Reef, McLeodsville (*ante*). *Ref.* G.S.Q. Pub. 16, p. 27 (1884).

3715. ——. In quartz. Brilliant, Caledonia, Calliope, Cosmopolitan, Jenolan, National, and Sir Wm. Alfred Reefs, Lane's Cr., 16 miles N.N.W. of Georgetown, **Etheridge Goldfield.** *Co.* Einasleigh; *Dist.* Cook. *Ref.* G.S.Q. Pub., p. 10 (1900).

3716. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Aurora Reef, Aurora Cr., 8 miles S.W. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 5 (1887).

3717. ——. *Assoc.with* Iron Pyrites and Galena, in ironstained quartz. *Loc.* Redan Reef, Aurora Cr. (*ante*). *Ref.* G.S.Q. Pub. 151, p. 10 (1900).

3718. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, and Galena, in quartz and calcite. *Loc.* Balmoral Reef, 1½ mile W. of Castleton, 5 miles S.S.E. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), 151, p. 12 (1900).

3719. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Big Reef, Castleton, 5 miles S.S.E. of Charleston Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 151, p. 12 (1900).

3720. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Galena, in quartz. *Loc.* Sir Henry Havelock Reef, 2½ miles N.W. of Castleton, 5 miles S.S.E. of Charleston Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 151, p. 12 (1900).

3721. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Redruthite, Mispickel, Galena, and Zinc Blende, in quartz. *Loc.* Nil Desperandum Reef, Charleston, 144 miles (by rail) S.W. of Almaden Rail. Stn. (Etheridge line), 265 miles (by rail) S.W. of Cairns, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 151, p. 11 (1900), and 219, p. 14 (1909).

3722. ——. *Assoc.with* Iron Pyrites, Pyrrhotite, Galena, and Zinc Blende, in quartz. *Loc.* Queenslander Mine, Charleston (*ante*). *Ref.* G.S.Q. Pubs. 151, p. 11 (1900), and 219, p. 13 (1909), and O.R.

3723. ——. In quartz. Struggle Reef, Charleston (*ante*). *Ref.* G.S.M.

3723A.——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Battista Menine's Claim, Delaney R., Charleston (*ante*). *Ref.* A.R., p. 261 (1910).

3724. ——. *Assoc.with* Iron Pyrites and Galena. *Loc.* Cumberland Reef, Cumberland, 12 miles W.byS. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 5 (1887).

3724A.——. In quartz. Jubilee Reef, 2½ miles N.W. of Cumberland, 14 miles W.byS. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 219, pp. 11, 12 (1909).

3725. ——. In quartz. City of Glasgow Reef, Donnybrook, 4½ miles S. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 151, pp. 4, 15 (1900).

3725A.——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Durham Consols Mine, Durham, 4 miles W. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* A.R., p. 323 (1911).

3726. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Durham Reef, Durham (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 4 (1887), and 219, pp. 10, 11 (1909).

3727. ——. *Assoc.with* Marcasite and Copper Ores. *Loc.* Havelock Mine, 5 miles S. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 219, pp. 12, 13 (1909), and G.S.M.

3727A.——. *Assoc.with* Galena, Massicot, Cerussite, and Malachite, in quartz and schist. *Loc.* Ancient Briton Claim, Georgetown, 20 miles N. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* A.R., p. 215 (1910).

3728. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Lady Maria Reef, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 7 (1900).

3729. Gold. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, Galena, and Zinc Blende, in quartz. *Loc.* Papa Reef, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 35, p. 3 (1887).

3729A.——. *Assoc.with* Iron Pyrites and Zinc Blende, in quartz . *Loc.* Spero Meliora Reef, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 35, p. 4 (1887).

3730. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz. *Loc.* St. George Mine, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 6 (1900).

3731. ——. In quartz. Telegraph Mine, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 5 (1900).

3732. ——. In quartz. Better Luck, City of Sydney, North Star, Paxo, Rescue, and Victoria Reefs, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 7 (1900).

3732A.——. *Assoc.with* Iron Pyrites, Galena, and Tenorite, in quartz. *Loc.* Young Wexford Mine (Wexford Reef), 3 miles N. of Georgetown, 24 miles N. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 151, p. 6 (1900), and G.S.M.

3733. ——. In quartz. City of Dunedin, Coolgardie, Diamond Jubilee, Glencoe, and Melbourne Exhibition Reefs, 3 miles N. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* O.M.

3734. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Caledonia Reef, 5½ miles S.W. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 4 (1887), 151, pp. 7, 8 (1900).

3735. ——. *Assoc.with* Silver-Lead Ore. *Loc.* Grand Junction P.C., Glenrowan Cr., 8 miles W. of Charleston Rail. Stn., 20 miles S.byW. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 49 (1897).

3736. ——. *Assoc.with* Iron Pyrites, Hematite, and Limonite, in quartz. *Loc.* Caledonia Reef, Caledonia Cr., trib. of Goldsmith Cr., 27 miles S.S.E. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

3737. ——. *Assoc.with* Ironstone and Manganese-dioxide. *Loc.* Lady Franklin Reef, Caledonia Cr., trib. of Goldsmith Cr. (*ante*). *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

3738. ——. In quartz. All Nations, Black Jack, Canadian, Milky Way, and Ropewalk Reefs, Goldsmith Cr. (*ante*). *Ref.* G.S.Q. Pubs., p. 35 (1887), and 151, p. 13 (1900).

3739. ——. *Assoc.with* Silver, Copper Pyrites, Chalcanthite, and Copper carbonate, in quartz reef. *Loc.* Elektron Silver Mine, Caledonia Cr., trib. of Goldsmith Cr. (*ante*). *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

3740. ——. *Assoc.with* Iron Pyrites, Galena, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* International Reef, Rocky, Sandy Cr., 7 miles S.W.byS. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 151, p. 10 (1900), 219, p. 9 (1909).

3740A.——. *Assoc.with* Silver, Galena, Massicot, Anglesite, and Cerussite, in lode. *Loc.* One mile N. of International Mine, Rocky, Sandy Cr. (*ante*). *Assays: See* 2757A. *Ref.* A.R., p. 228 (1910).

3741. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Stonewall Jackson Reef, Rocky, Sandy Cr. (*ante*). *Ref.* G.S.Q. Pub. 151, p. 10 (1900), and G.S.M.

3742. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Butcher Bird, Deceitful Susan, Merry Monarch, and Stockman Reefs, between Talbot and Machine Crs., 10 miles S.E.byS. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 151, pp. 10, 11 (1900).

3743. ——. In quartz. True True Reef, Western Cr., 16 miles S.W.byS. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 151, p. 13 (1900).

See further Etheridge references, No. 2829, etc.

3744. ——. In quartz. Hogan's Reef, **Green Hills Goldfield,** 24 miles S.W.byS. of Georgetown. *Cos.* Gilbert and Lang; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 24 (1897).

3745. ——. In quartz reef. Red Flat, Green Hills Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 24 (1897).

3746. ——. *Assoc.with* Copper carbonate, Galena, and Calcite, in quartz reef. *Loc.* Black Ball Mine, Central Hodgkinson, 2½ miles N. of Thornborough, 21 miles (by coach) N.N.W. of Dimbullah Rail. Stn. (Chillagoe line), 94 miles (by rail and road) W. of Cairns, **Hodgkinson Goldfield.** *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 6 (1884), and P.R.S.Q., vol. 4, p. 47 (1887).

3747. ——. *Assoc.with* Galena, in quartz reef. *Loc.* Hit or Miss Reef, Central Hodgkinson, 2 miles N.E. of Thornborough (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 47 (1887).

3748. ——. In quartz reef. *Loc.* Homeward Bound Reef, Central Hodgkinson, 2 miles N.E. of Thornborough (*ante*). *Ref.* G.S.Q. Pub. 16, p. 6 (1884), and G.S.M.

3749. ——. In quartz. *Loc.* Lady Catherine Reef, Central Hodgkinson, 2 miles N. of Thornborough (*ante*). *Ref.* G.S.Q. Pub. 16, p. 9 (1884).

3750. ——. *Assoc.with* traces of Stibnite. *Loc.* Mark Twain Reef, Central Hodgkinson, 2 miles N. of Thornborough (*ante*). *Ref.* G.S.Q. Pub. 16, p. 8 (1884).

3751. ——. *Assoc.with* traces of Galena, in quartz. *Loc.* North Star Reef, Central Hodgkinson, 2 miles N.N.E. of Thornborough (*ante*). *Ref.* G.S.Q. Pub. 16, p. 7 (1884).

3752. ——. *Assoc.with* Galena, in quartz. *Loc.* Pioneer Reef, ¾-mile N. of Thornborough, Hodgkinson Goldfield, 19 miles (by coach) N.N.W. of Dimbullah, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 16 (1884).

3753. ——. In quartz. Alliance, Amy Moore, Bismarck, Black Prince, Britannia, Caledonia, Columbia, Commodore, Devon and Cornwall, Emperor, Empress of India, Eureka, Explorer, Flying Pig, Forget-me-not. Fourth of July, Garry Owen, Great Northern, Henry Grattan, Hero, Hope, Idaho, King Attila, Lady Ann, Lady Mary, Mowbray, Outward Bound, Providence, Rob Roy, Tasmania, Tichborne, Tyrconnel, Von Molke, Vulcan, and other reefs. *Loc.* Central Hodgkinson (Thornborough and Kingsborough), Hodgkinson Goldfield (*ante*). *Ref.* G.S.Q. Pub. 16 (116), p. 5 (1884).

3753A. ——. *Assoc.with* Stibnite. *Loc.* Thornborough, Hodgkinson Goldfield (*ante*). *Assay:* Gold = 2½ oz. per ton; Antimony = 69·8 per cent. *Ref.* A.R., p. 92 (1907).

3753B. ——. *Assoc.with* Scheelite, in quartz. *Loc.* Southern Cross Mine, 1 mile S.W. of Kingsborough, Hodgkinson Goldfield (*ante*). *Ref.* Q.G.M.J., vol. 12, p. 62 (1911).

3754. ——. In quartz. Beaconsfield Mine (? Monarch Reef), Northcote, 15 miles W of Mareeba Rail. Stn. (Cairns line), 61 miles (by rail and road) W. of Cairns, Hodgkinson Goldfield (*ante*).

3755. ——. *Assoc.with* Iron Pyrites, Stibnite, and Cervantite, in quartz reef. *Loc.* Craig's Lease, Emily Line of Reef, Northcote (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 45 (1887).

3756. ——. *Assoc.with* Iron Pyrites, Stibnite, Cervantite, in quartz reef. *Loc.* Emily Antimony Lease, Northcote (*ante*). *Ref.* G.S.Q. Pub. 16 (116), p. 31 (1884), and 125, p. 48 (1897).

3757. ——. *Assoc.with* Iron Pyrites, Mispickel, and Galena, in quartz. *Loc.* Just-in-Time Reef, Northcote (*ante*). *Ref.* G.S.Q. Pub. 16 (116), p. 28 (1884).

3758. ——. *Assoc.with* Stibnite, in quartz reef. *Loc.* Matilda (Pyles') Mine, Northcote (*ante*). *Ref.* G.S.Q. Pub. 16 (116), p. 31 (1884).

3759. ——. *Assoc.with* Stibnite, in quartz reef. *Loc.* Minnie Moxham Mine, Northcote (*ante*). *Yield:* Gold = 2 oz. per ton. *Ref.* G.S.Q. Pub. 16 (116), p. 31 (1884), and P.R.S.Q., vol. 4, p. 45 (1887).

3760. ——. *Assoc.with* Copper Pyrites and Galena, in quartz. *Loc.* Monarch Reef, Northcote (*ante*). *Ref.* G.S.Q. Pub. 16 (116), p. 28 (1884).

3761. ——. In quartz. Australasian, Downpatrick, Enterprise, Maria, Monkland Mountaineer, You-Never-Can-Tell, and other reefs, Northcote (*ante*). *Ref.* G.S.Q. Pub. 16 (116), pp. 28-31 (1884).

3762. ——. *Assoc.with* Mispickel. *Loc.* Captain Cook Reef, Woodville, 9 miles N.W.byW. of Thornborough, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16 (116), p. 22 (1884).

3763. ——. *Assoc.with* Stibnite, in quartz. *Loc.* Home Rule Reef, Woodville (*ante*). *Ref.* G.S.Q. Pub. 16, p. 23 (1884), and G.S.M.

3764. ——. In quartz. Band of Freedom, Chance, Crown, Dagworth, Geraldine, Lighthouse, Result, Richmond, St. George, and other reefs, Woodville (*ante*). *Ref.* G.S.Q. Pub. 16 (116), pp. 22-26 (1884).

3765. ——. *Assoc.with* Iron Pyrites, Galena, Mispickel, and Zinc Blende, in quartz. *Loc.* Union Reef, 3½ miles N.W.byN. of Woodville, 13 miles N.W. of Thornborough, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 24 (1884), and P.R.S.Q., vol. 4, p. 47 (1887).

3766. ——. *Assoc.with* Iron Pyrites, Galena, and Hornblende, in quartz. *Loc.* Luxton's Mine, Wet Cr., California Cr., 3 miles N.E. of Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay:* Gold = 150 oz. 16 dwt. per ton. *Ref.* G.S.Q. Pub. 119, p. 42 (1897).

3767. ——. *Assoc.with* Native Silver and Copper. Noble Is., 80 miles N.W.byN. of Cooktown. *Co.* Melville; *Dist.* Cook. *Ref.* Q.G.M.J., vol. 9, p. 263 (1908).

3768. Gold. In quartz leader. Boulder Lease, **Jordan Goldfield,** 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 157, p. 2 (1901).

3769. ——. In quartz. *Loc.* Douglas Cr. G. Lease, between Douglas and Henrietta Cr., Jordan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 157, p. 2 (1901).

3770. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Jordan Gold Mine, Jordan Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 157, p. 1 (1901).

3771. ——. *Assoc.with* Mispickel, in granite. *Loc.* Jordan P.C., Jordan Gully, Jordan Goldfield (*ante*). *Assay:* Gold = 2½ oz., Silver = 15 dwt. per ton. *Ref.* G.S.Q. Pub. 157, p. 3 (1901).

3772. ——. In quartz leader. *Loc.* McQueen's P.A. (19), Jordan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 157, p. 2 (1901).

3773. ——. *Assoc.with* Hematite, in quartz. *Loc.* Meyer's Leaders, **Mareeba Goldfield,** Tinaroo Cr., 5 miles S.E. of Mareeba Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 97, p. 6 (1894).

3774. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Queen Constance P.C., Mareeba Goldfield (*ante*). *Ref.* G.S.Q. Pub. 97, p. 5 (1894).

3775. ——. *Assoc.with* Iron Pyrites, Zinc Blende, and Stibnite, in quartz. *Loc.* Queen Constance 5 N. Claim, Mareeba Goldfield (*ante*). *Ref.* G.S.Q. Pub. 97, p. 6 (1894).

3776. ——. In quartz. Alabama, Carey's Golden Star United, Mullin's Prairie Flower, and Queen Constance 4 N. Mines, Mareeba Goldfield (*ante*). *Ref.* G.S.Q. Pub. 97, pp. 5, 6 (1894).

3777. ——. In quartz. Alice Reef, **Mulgrave Goldfield,** 9 miles S.S.W. of Mulgrave Rail. Stn. (Cairns-Mulgrave Tramway), 25 miles N.W.byW. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.M.

3778. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Walter Hodgson's Reef, Butcher's Cr., Mulgrave R., Mulgrave Goldfield (*ante*). *Ref.* G.S.Q. Pub. 89, p. 5 (1893).

3779. ——. In quartz. Airlie Reef, 1 mile S.W. of Coleman Township, **Russell Extd.** (Towalla) **Goldfield,** 18 miles W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Yield:* Gold = 3 oz. 15 dwt. 20 gr. per ton. *Ref.* G.S.Q. Pub. 97, p. 3 (1894).

3780. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Coral Queen Reef, Combo Cr., Russell Extd. (Towalla) Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 89, p. 4 (1893), and 97, p. 2 (1894).

3781. ——. In quartz. Eureka Reef, Russell Extd. (Towalla) Goldfield (*ante*). *Yield:* Gold = 3 oz. per ton. *Ref.* G.S.Q. Pub. 97, p. 2 (1894).

3782. ——. In quartz reef. Gt. Eastern Mine, Combo Cr., Russell Extd. (Towalla) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 97, p. 2 (1894).

3783. ——. In quartz reef. Ivanhoe Mine, Russell Extd. (Towalla) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 97, p. 4 (1894).

3784. ——. In quartz reef. Kendle and Devry's Reef, Russell Extd. (Towalla) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 97, p. 2 (1894).

3785. ——. In quartz reef. King of the Ranges Mine, New Zealand Gully, Russell Ext. (Towalla) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 97, p. 3 (1894).

3786. ——. *Assoc.with* Ironstone and Quartz, in brecciated slate. *Loc.* Mt. Bartle Frere Reef, Christmas Cr., Mulgrave R., Russell Extd. (Towalla) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 89, p. 5 (1893).

3787. ——. In quartz leaders. New Zealand Reef, New Zealand Gully, Russell Extd. (Towalla) Goldfield (*ante*). *Yield:* Gold = 3 oz. per ton. *Ref.* G.S.Q. Pub. 97, p. 3 (1894).

3788. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Phœnix Reef, Russell Extd. (Towalla) Goldfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 89, p. 4 (1893).

3789. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Rose and Shamrock Mine, French's Cr., Russell Extd. (Towalla) Goldfield (*ante*). *Yield:* Gold = 3 oz. per ton. *Ref.* G.S.Q. Pub. 97, p. 3 (1894).

3790. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Towalla King Mine, Cooliman Cr., Russell Extd. (Towalla) Goldfield (*ante*). *Yield:* 3 oz per ton. *Ref.* G.S.Q. Pub. 97, p. 4 (1894).

3791. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Victory Mine, Combo Cr., Russell Extd. (Towalla) Goldfield (*ante*). *Yield:* Gold = 2½ oz. per ton. *Ref.* G.S.Q. Pub. 97, p. 2 (1894).

3791A.——. In quartz. Susan Leader, Christmas Hill, 14 miles E.S.E. of Percyville, **Etheridge Goldfield.** *Co.* Percy; *Dist.* Cook. *Ref.* G.S.Q. Pub. 24, pp. 20, 21 (1911).

3792. ——. In quartz. Captain Townley, General Gordon, Tasmania, and Welcome Mines, Mt. Hogan, 14 miles N.E.byE. of Gilberton, 44 miles S.E.byS. of Charleston (Etheridge Goldfield). *Co.* Percy (*ante*). *Ref.* A.R.D.M., p. 64 (1892).

3793. ——. In telluride ore. Mt. Hogan (*ante*). *Ref.* G.S.M.

3794. ——. *Assoc.with* Galena and Cerussite, in quartz leader. *Loc.* Avis's Lease, **Oaks Gold and Mineral Field**, 22 miles S.byE. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy; *Dist.* Cook. *Assay:* Gold = 2 oz. 6 dwt., Silver = 28 oz. 8 dwt. per ton; Lead = 43·8 per cent. *Ref.* A.R., p. 156 (1908).

3795. ——. In quartz reef. Wise's Lease, Oaks Gold and Mineral Field (*ante*). *Ref.* G.S.M.

3796. ——. *Assoc.with* Silver, Iron Pyrites, and Copper Pyrites, in quartz reef. *Loc.* Wise's Shaft, Wise's Knob, Oaks Goldfield (*ante*). *Assay:* Gold = 1 oz. 2 dwt., Silver = 3 oz. 16 dwt. per ton; Copper = 1·7 per cent. *Ref.* A.R., p. 164 (1908).

3797. ——. In ferruginous quartz. Oaks Goldfield (*ante*). *Ref.* O.R. and A.R.D.M., p. 57 (1907).

3798. ——. *Assoc.with* Agate. *Loc.* Cameron's Leader, Upper Percy R., 60 miles S. of Georgetown (Etheridge Goldfield). *Co.* Percy; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 24 (1897).

3799. ——. In quartz. Springfield P.C. and Klondyke King Mines, Klondyke Mg. Centre, 12 miles W. of Coen; **Coen Goldfield**. *Co.* Sidmouth; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 23 (1901).

3800. ——. *Assoc.with* Galena, in quartz. *Loc.* Goolha Goolha Reef, The Springs, 9 miles (by road) S.E. of Coen, Coen Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 22 (1901).

3801. ——. In quartz. Westralia Reef, The Springs (*ante*). *Ref.* G.S.Q. Pub. 163, p. 22 (1901).

3802. ——. *Assoc.with* Galena and Iron Pyrites, in quartz veins, in granite. *Loc.* Possession Is., 15 miles S.E. of Thursday Is., Torres Strait. *Co.* Somerset; *Dist.* Cook. *Assay:* Gold = 1 oz. 17 dwt. 5 gr., Silver = 1 oz. 1 dwt. 19 gr. per ton. *Ref.* G.S.Q. Pub. 180, p. 22 (1902).

3803. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* on Hammond Is., 1½ mile N. of Thursday Is., Torres Strait (*ante*). *Assays:* (1) Gold = 23 oz. per ton; (2) Gold = 8 oz. per ton. *Ref.* G.S.Q. Pub. 112, p. 1 (1896), and A.R., p. 191 (1909).

3804. ——. In quartz. Band of Hope Mine (Band of Hope Reef), Horn Island Goldfield, 3 miles S.E. of Thursday Is., Torres Strait. *Co.* Torres; *Dist.* Cook. *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

3805. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Brilliant Mine (Brilliant and Parallel Reefs), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

3806. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Cornucopia Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

3807. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Dead Cat Mine (Good Luck and Dead Cat Reefs), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 3 (1896).

3808. ——. *Assoc.with* Galena, Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Eclipse Mines, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 6 (1896).

3809. ——. *Assoc.with* Iron Pyrites, in quartz and felspar. *Loc.* Golden Gate Mine, Mystery and Dead Cat Reefs, Horn Island Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 3 (1896).

3810. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Gympie Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

3811. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Italian Mine (Good Luck and Italian Reef), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

3812. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Mystery P.C. Mine (Mystery or Dead Cat Reef), Horn Island Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 2 (1896).

3813. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* New Chum Mine (Dead Cat Reef), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 3 (1896).

3814. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in quartz reef. *Loc.* Pioneer Mine (Pioneer Reef), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

3815. Gold. In quartz. Reward Claim (Dead Cat and Success Reefs), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

3816. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Rossetta Mine (Brilliant Reef), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

3817. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Smith's Reef, Horn Is. Goldfield (*ante*). *Ref.* G.S.M.

3818. ——. In quartz. Thistle Mine, (?) Good Luck Reef, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 3 (1896).

3819. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz and chlorite. *Loc.* Triumph Mine (Nos. 2 and 3 Reefs), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

3820. ——. In quartz. Welcome Mine (Welcome Reef), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

3821. ——. In quartz. Diggers' Luck, Horn Island, Narupai, Peter the Great, Reconstruction Mines, and Bonanza and Norseman Leaders, Horn Island (*ante*). *Ref.* G.S.Q. Pub. 112, pp. 3-5 (1896).

3822. ——. In quartz. In the Dead Cat Reef, in the Mystery P.C., Golden Gate, New Chum, and Reward Mines, Horn Island Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, pp. 2, 3 (1896).

3823. ——. In quartz. Good Luck Reef, in the Dead Cat, Thistle and Italian Mines, Horn Island Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112 (1896).

3824. ——. In quartz. Gold Workings, Prince of Wales Island, 1 mile S.W. of Thursday Is., Torres Strait. *Co.* Torres; *Dist.* Cook. *Ref.* G.S.Q. Pub. 112, p. 1 (1896).

3824A. ——. *Assoc.with* Silver, in quartz. *Loc.* Pyramid Hill, Banks (Moa) Is., Torres Strait. *Co.* Torres; *Dist.* Cook. *Ref.* A.R., p. 311 (1911).

3825. ——. In quartz. Alice Queen Reef, **Alice R. (Philp) Goldfield**, 80 miles N. of W. of Laura Rail. Stn. (Cooktown line). *Co.* Warner; *Dist.* Cook. *Ref.* G.S.Q. Pub. 209, p. 11 (1907).

3826. ——. In quartz. Peninsular King Reefs, Alice R. (Philp) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 209, pp. 11, 12 (1907).

3827. ——. In quartz reef. Dodd's Reef, ½-mile S. of Hayes's Cr., divide on Nesbit Waters; **Hayes' Cr. Prov. Goldfield,** about 190 miles N.W. of Cooktown. *Co.* Weymouth; *Dist.* Cook. *Ref.* A.R.D.M., p. 54 (1909), and Q.G.M.J., vol. 9, p. 264 (1908), and vol. 11 (pp. 600-603 (1910).

3827A. ——. *Assoc.with* Silver, in quartz. *Loc.* about 5 miles from Hayes' Cr. Prov. Goldfield, Cape York Peninsula, and about 195 miles N.W. of Cooktown. *Co.* Weymouth (*ante*). *Ref.* A.R., p. 287 (1910).

3827B. ——. *Assoc.with* Silver, in quartz. *Loc.* Valley of Hills, 6 miles N. of Hayes's Cr. Prov. Goldfield. *Co.* Weymouth (*ante*). *Ref.* A.R., p. 286 (1910).

3828. ——. *Assoc.with* Antimony, in lode. *Loc.* **Mitchell R.** Gold and Antimony Mines, 40 miles N.E. of Mungana Rail. Stn (Chillagoe line). *Co.* Wrotham; *Dist.* Cook. *Ref.* A.R.D.M., p. 71 (1907).

3829. ——. In telluride ore. Colley's Lord Robert's Mine, Gilberton, 48 miles S.byE. of Charleston Rail. Stn. (Etheridge line), **Etheridge Goldfield.** *Co.* Victor; *Dist.* Cook. *Ref.* G.S.M.

3830. ——. In quartz. Caledonia, Commissioner's Hill, Homeward Bound, Jeanette, Joseph Morris, Lord Roberts, and Lord Kitchener Mines, Gilberton (*ante*). *Ref.* A.R.D.M., pp. 64, 65 (1892), and p. 56 (1903).

3831. ——. *Assoc.with* Cuprite, Redruthite, and Copper carbonate, in lode. *Loc.* Percy R., 5 miles above junction with Gilbert R., 41 miles S. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 151, p. 13 (1900).

3831A. ——. In quartz. P.C. **Blair Prov. Goldfield,** Macintyre Brook, 10 miles E.byS. of Gore Rail. Stn. (Goondiwindi line). *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* A.R.D.M., p. 101 (1905).

3832. ——. *Assoc.with* Silver, Copper Pyrites, and Mispickel, in quartz reef. *Loc.* Fletcher's Sel. (29), Jibbinbar, 20½ miles S.byW. of Stanthorpe. *Co.* Bentinck (*ante*). *Assays:* Gold = 1 oz. 12 dwt. and 1 oz. 14 dwt., Silver = 51 oz. and 21 oz. per ton. *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

3833. ——. *Assoc.with* Galena, Minium, and Mispickel, in quartz and gossan. *Loc.* Min. Area (25), Jibbinbar (*ante*). *Assays:* (1) Silver = 16 oz. per ton; (2) Silver = 48 oz. Gold = 3 dwt. per ton. *Ref.* G.S.Q. Pub. 87, p. 10 (1892).

3833A. ——. *Assoc.with* Silver, Mispickel, and Zinc Blende, in quartz and granite. *Loc.* Steele's Sel. (31), Jibbinbar (*ante*). *Assays:* Gold = 3 dwt. 16 gr., Silver = 1 oz. 10 dwt. 12 gr. per ton. *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

3833B. ——. *Assoc.with* Iron Pyrites, Hematite, Limonite, Manganese-dioxide, in quartz. *Loc.* Glenelg Reef, nr. Oakey Cr., 9 miles E. of Glenelg Head Stn., 55 miles (by road) W.S.W. of Warwick. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 40, pp. 1, 2 (1887).

3834. ——. *Assoc.with* Iron Pyrites, Mispickel, and Galena, in quartz and calcite. *Loc.* Kaffir Chief Mine, **Pikedale Goldfield,** 20 miles N.W.byN. of Stanthorpe Rail. Stn. *Co.* Bentinck (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 105, pp. 7, 8 (1895), and 120, p. 74 (1898).

3835. ——. *Assoc.with* Mispickel, in quartz. *Loc.* P. and O. Mine, 3 miles W. of Macintyre Brook, Pikedale Goldfield (*ante*). *Assay:* Gold = 14 dwt. 8 gr. per ton. *Ref.* G.S.Q. Pubs. 105, pp. 6, 7 (1895), 120, p. 77 (1898).

3836. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Royel Standard Mine, Pikedale Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 78 (1898).

3837. ——. In quartz. Dan O'Connell, Good Hope, Independent, Lady Jane, and Star of the East Mines, Pikedale Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 105, pp 8, 9 (1895), and 120, pp. 77, 78 (1898).

3838. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Cameronian Reef, Pikedale Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 10 (1892), 105, p. 9 (1895), and 120, p. 77 (1898).

3839. ——. In quartz. Blackfellows', Rise and Shine, Star, Wanderer, and Webb's Reefs, Pikedale Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 10 (1892), and 120, pp. 72, 77 (1898).

3840. ——. *Assoc.with* Cassiterite, Mispickel, Wolfram, and Molybdenite, in quartz and greisen. *Loc.* Pikedale Lode (Sels. 705, 706w), 10 miles W.byN. of Stanthorpe Rail. Stn. *Co.* Bentinck; *Dist.* Darling Downs. *Assays:* Gold = 18 dwt. and 1 oz. 12 dwt. per ton. *Ref.* G.S.Q. Pubs. 40, p. 4 (1887), 120, p. 47 (1895).

3841. ——. In quartz. Nundubbermere, 13 miles S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M.

3842. ——. *Assoc.with* Silver, Iron Pyrites, and Copper carbonate, in quartz reef. *Loc.* Sel. (24), nr. Sundown Cr., Severn R., 11 miles W.S.W. of Ballandean Rail. Stn., 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay:* Gold = 18 dwt., Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

3842A. ——. *Assoc.with* Copper Ore. *Loc.* Glenlyon Run, about 2 miles north of Homestead, about 45 miles (by road) S.W.byW. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* Q.G.M.J., vol. 11, p. 258 (1910).

3842B. ——. In quartz. Lambert Bros. and Bracker and Party's Mines, **Macdonald Prov. Goldfield,** 31 miles W.byS. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* A.R.D.M., p. 101 (1905).

3843. ——. *Assoc.with* Pyrargyrite, Iron Pyrites, Copper Pyrites, Cuprite, Tile Ore, Azurite, Malachite, Galena, Cerussite, Zinc Blende, Smithsonite, Ironstone, and Calcite. *Loc.* Silver Spur Mine, 8 miles E. of **Texas,** 43 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* G.S.Q. Pubs, 120 (1898) and 191 (1904).

3844. ——. In quartz. Lady Caroline Mine, **Leyburn Goldfield,** 28 miles W.byN. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pubs. 125, p. 51 (1897), and 120, p. 71 (1898).

3845. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Talc, in quartz. *Loc.* Von Molke Mine, Leyburn Goldfield (*ante*). *Assays:* (1) Gold = 16 dwt. 9 gr., Silver = 6 dwt. per ton; (2) Gold = 5 oz. 8 dwt., Silver = 1 oz. 5 dwt. per ton. *Ref.* G.S.Q. Pubs. 120, p. 71 (1898), and 87, p. 8 (1892).

3846. ——. *Assoc.with* Silver, in quartz reef. *Loc.* Leyburn Goldfield (*ante*). *Assay:* Gold = 6 oz. 3 dwt., Silver = 1 oz. 14 dwt. per ton. *Ref.* A.R., p. 43 (1906).

3847. ——. *Assoc.with* Tellurium, in quartz vein. *Loc.* Lucky Valley, 10 miles S.E. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* D.H.A.

3848. ——. In quartz. Madam Ross Mine, **Palgrave Goldfield,** 21 miles W.S.W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 125, p. 27 (1897).

3849. ——. In quartz. Mountain Maid Mine, Palgrave Goldfield (*ante*). *Ref.* A.R.D.M, p. 89 (1898).

3850. ——. *Assoc.with* Iron Pyrites and Limonite, in quartz. *Loc.* Clare's Reef, **Talgai Goldfield,** 21 miles W.N..W of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 205, p. 28 (1906).

3851. ——. *Assoc.with* Limonite and Manganese-dioxide, in quartz leaders. *Loc.* Golden Gate Lease, Talgai Goldfield (*nate*). *Ref.* G.S.Q. Pub. 205, p. 29 (1906).

3852. ——. In quartz. *Loc.* Louisa Mine, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 55 (1898).

3853. Gold. In quartz. Prince of Wales Mine, Gum-tree Flat, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 56 (1898).

3854. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* St. Patrick P.C., Saw Gully, 1 mile S.W. of Pratten, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 120, p. 60 (1898); 186, p. 15 (1903); and 205, p. 31 (1906).

3855. ——. In quartz. Sultan and Taylor Mine, Taylor Reef, Darky Flat, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 7 (1892), and 120, pp. 56-59 (1898).

3856. ——. *Assoc.with* Silver. *Loc.* Big Hill Reef, 3 miles W. of Pratten, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 7 (1892), and 120, p. 61 (1898).

3857. ——. In quartz. Gladstone Reef, 1½ mile S. of Mt. Gammie North, 2 miles S.W. of Big Hill, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 7 (1892); 186, p. 13 (1903); and 205, p. 31 (1906).

3858. ——. In quartz. Monte Christo Reef, Big Hill, or Mt. Gammie North, 3 miles W. of Pratten, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pub. 87, p. 7 (1892).

3859. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Queenslander Mine, Big Hill, 3 miles W. of Pratten, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 7 (1892); 120, p. 61 (1898); and A.R., p. 188 (1909).

3860. ——. *Assoc.with* Limonite, in quartz. *Loc.* Victoria Reef (Big Hill Lease), 3 miles W. of Pratten, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 186, p. 16 (1903), and 205, p. 30 (1906).

3861. ——. *Assoc.with* Limonite, in quartz. *Loc.* Welcome Stranger Lease, nr. Big Hill Lease, 3 miles W. of Pratten (*ante*). *Ref.* G.S.Q. Pubs. 185, p. 4 (1903), and 205, p. 28 (1906).

3862. ——. In quartz. Brilliant, New Chum, Woodman's and Falconer's Reefs, Big Hill, 3 miles W. of Pratten (*ante*). *Ref.* G.S.Q. Pub. 120, pp. 63, 64 (1898).

3863. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz reef. *Loc.* 2½ miles S.W. of Talgai Stn., 23½ miles W.N.W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Assays:* (1) Gold = 3 oz. per ton; (2) Gold = 2 oz. 15 dwt., Silver = 3 oz. per ton. *Ref.* G.S.Q. Pub. 87 (1892).

3864. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Cullan's Twins P.A. (middle, northern, and southern reefs), **Thane's Cr. Goldfield,** 24 miles W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 205, pp. 34-36 (1906).

3865. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* El Dorado Mine, Thane's Creek, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 68 (1898).

3866. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Guiding Star Reef, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 120, p. 70 (1898), and 205, pp. 32, 33 (1906).

3867. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Just-in-Time (late Dawn of Hope) Mine, 1 mile W. of Mt. Gammie, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 40, p 2 (1887); 87, p. 8 (1892); and 120, p. 67 (1898).

3868. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Mountain Maid Reef, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 87, pp. 8, 9 (1892).

3869. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Telegraph Reef, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 87, p. 9 (1892).

3870. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Try again Reef, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 69 (1898).

3871. ——. In quartz. Beaconsfield, Howard's, Malakoff, Queen, and Sunny South Mines, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 8 (1892), and 120, pp. 64, 66, 70 (1898).

3872. ——. *Assoc.with* Ironstone, on surface of lode. *Loc.* Spur of Mt. Gammie, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 40, p. 3 (1887).

3873. ——. In laterite. Freestone Cr., trib. of Glengallan Cr., 9 miles N.N.E. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 186, p. 21 (1903).

3874. ——. In laterite. Mt. Sturt, 2 miles N.N.W. of Yangan Rail. Stn. (Killarney line), 15 miles (by rail and road) E.byN. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 186, p. 20 (1903).

3875. ——. In quartz. Lady Mary Reef, 1½ mile S.E. of Bray's Camp, nr. head of Sandy Cr., 22 miles S.W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 87, p. 9 (1892).

3876. ——. *Assoc.with* Cuprite, Tile Ore, Tenorite, Malachite, Atacamite, Chalcanthite, Iron Pyrites, Limonite, Calcite, and Chalcedony, in kaolinised slate and gossan. *Loc.* Mt. Elliott Copper Mine, **Mt. Elliott** Group, Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 3-12 (1908).

3877. —— In quartz. Herbert R., Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), **Walsh and Tinaroo Mineral Fields.** *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.M.

3878. ——. *Assoc.with* Silver, Copper Pyrites, Iron Pyrites, Mispickel, Bornite, Cuprite, Tenorite, Azurite, Malachite, Chalcanthite, Hematite, Magnetite, Cerussite, Minium, and Zinc Blende, in quartz lodes in quartzites and porphyry. *Loc.* Mt. Garnet Mines, Return Cr., 136 miles (by rail) S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

3879. ——. In quartz reefs. **Balcooma Goldfield,** 80 miles E.S.E. of Georgetown. *Co.* Clarke; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 15, p. 49 (1900).

3879A. ——. In quartz. Golden King, Lucky Surprise, Mint, Orient P.C., and Try Again United Mines, **Lucky Downs** (Cr.) Diggings, 56 miles S.E. of Einasleigh Rail. Stn., 96 miles E.S.E. of Georgetown. *Co.* Clarke; *Dist.* Kennedy North. *Ref.* A.R.D.M., p. 38 (1908).

3879B. ——. In quartz. **Allandale Prov. Goldfield,** 38 miles S.W.byS. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* A.R.D.M., p. 34 (*map*) (1905).

3880. ——. In quartz. **Carrington Goldfield,** 20 miles S.S.W. of Charters Towers Goldfield. *Co.* Davenport (*ante*). *Ref.* A.R.D.M., p. 34 (*map*) (1905).

3881. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz. Alexandra Hill G.M. Co.'s Mine, Charters Towers, 82 miles (by rail) S.W. byS. of Townsville. *Co.* Davenport (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

3882. ——. *Assoc.with* Iron Pyrites, and Galena, in quartz. *Loc.* Band of Hope Lease (Victoria Reef), **Charters Towers Goldfield** (*ante*). *Ref.* W.C.T.

3883. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Blue Peter Lease and No. 1 E. (Blue Peter Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3884. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Bonnie Doon Lease, Bonnie Doon Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3885. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Bonnie Dundee Lease, Queen, Victory, and Brilliant Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

3886. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Brilliant Block Lease, Brilliant Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

3887. ——. *Assoc.with* Iron Pyrites and Galena, in quartz.. *Loc.* Brilliant Central G.M. Lease, Brilliant, Victory, and Queen Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3888. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Brilliant Extd. Lease, Brilliant Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

3889. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Brilliant P.C., Brilliant Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3890. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Brilliant and St. George Utd. G.M. Co. Lease, St. George, Brilliant and Victory Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

3891. ——. *Assoc.with* Iron Pyrites, Zinc Blende, Galena, and Chlorite, in quartz. *Loc.* Byran O'Lynn Mine, Queen Reef, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, pp. 36, 49 (1887).

3892. ——. In quartz reef. Caroline Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3893. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in quartz and calcite. *Loc.* Carrington Lion 1 and 2 E. Lease, Lion Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3894. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, Zinc Blende, and Barytes, in quartz and calcite. *Loc.* Carrington Untd. Mines Ltd. Lease, Lion Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

3895. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Clark's Brilliant, Worcester, and Victory Leases, Victory Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

3896. ——. *Assoc.with* Iron Pyrites, and Galena, in quartz reef. *Loc.* Craven's Caledonia Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3897. ——. *Assoc.with* Galena and Iron Pyrites, in quartz reef. *Loc.* Dan O'Connell Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3898. Gold. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Day Dawn Block and Wyndham Lease, Day Dawn and Wyndham Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

3899. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Day Dawn Gold Mines Ltd. Lease, Day Dawn Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3900. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Day Dawn P.C., Day Dawn, Talisman, Peabody, and North Australian Reefs, Charters Towers Goldfield (*ante*). *Refs.* W.C.T. and A.R.D.M., p. 33 (1894).

3901. ——. *Assoc.with* Iron Pyrites, Zinc Blende, and Galena, in quartz reef. *Loc.* Day Dawn 3A West, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3902. ——. *Assoc.with* Iron Pyrites, in quartz reef. Day Dawn 5 W. Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3903. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Deep Levels Mines of Charters Towers, Brilliant Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3904. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* East Mexican G.M. Lease (Day Dawn and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3905. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Golden Alexandra Lease, Golden Alexandra Reef, Charters Towers Goldfield (*ante*) *Ref.* W.C.T.

3906. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Golden Gate Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3907. ——. *Assoc.with* Iron Pyrites and Zinc Blende, in quartz. *Loc.* Hope Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3908. ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Imperial G.M. Lease, Imperial Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3909. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Kelly's Queen Block Lease, Brilliant and Victory Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3910. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Lady Maria Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3911. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Mafeking P.C. G.M. Lease, Mafeking Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3912. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Marshall's Queen G.M. Lease, Queen, Brilliant, and Victory Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3913. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Mary and Rainbow Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3914. ——. *Assoc.with* Ironstone, in quartz. *Loc.* McColl's Just-in-Time P.C., Just-in-Time Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3915. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Millchester G.M. Lease, Old Identity Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3916. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Millet's Wellington Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3917. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Mills's Day Dawn United G.M. Lease, Day Dawn Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3918. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* New Brilliant Freeholds G.M. Lease, Day Dawn and Brilliant Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3918A. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* New Cravens Caledonia G.M. Lease, Caledonia, Just-in-Time, and Victoria Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3919. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz. *Loc.* New Imperial Mine, Charters Towers Goldfield (*ante*). *Assay:* Gold = 8·4 oz. per ton. *Ref.* A.R.D.M., p. 185 (1894).

3920. ——. *Assoc.with* Iron Pyrites and Galena, in quartz and calcite. *Loc.* New Queen G.M. Lease, Queen, Brilliant, and Victory Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3921. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* New Towers Extd. Mine, Charters Towers Goldfield (*ante*). *Yield:* Gold = 3·25 oz. per ton. *Ref.* A.R.D.M., p. 185 (1894).

3922. ——. *Assoc.with* Iron Pyrites, Zinc Blende, Bartyes, in quartz. *Loc.* Old Identity Mine, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 36 (1887), and G.S.M.

3923. ——. *Assoc.with* Iron Pyrites and Zinc Blende, in quartz. *Loc.* Old Imperial Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3924. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Papua Block Mine, Victory Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3925. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Papuan, Brilliant, and Victoria G.M. Lease, Brilliant, Victoria, and Victory Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3926. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Pfeiffer's Day Dawn Lease, Day Dawn Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3927. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Phœbe G.M. Lease, Victory and Brilliant Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3928. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Queen Central G.M. Lease, Victoria Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3929. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Queen Central Block G.M. Lease, Victoria Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3930. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Queen Deep Mines Lease, Queen Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3931. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Queen's Cross G.M. Lease, in Victoria and Just-in-Time Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3932. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Quinn's Block G.M. Lease, Millchester Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3933. ——. *Assoc.with* Iron Pyrites and Galena, in quartz and calcite. *Loc.* Roger's Millchester Block, Millchester Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3934. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Ruby G.M. Lease, Ruby and Rose of England Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3935. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Ruby United G.M. Lease, Ruby Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3936. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Stockholm (Brilliant G.M.) Lease (Stockholm Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3937. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* St. Patrick Block Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 28 (1879).

3938. ——. In quartz reef. St. Patrick Extd Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3939. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Sunburst P.C., Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

3940. ——.*Assoc.with* Iron Pyrites, in quartz. *Loc.* Talisman and New Dawn G.M. Lease, Peabody and North Australian Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3941. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Union Jack Consld. Mines, Victoria Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3942. ——. *Assoc.with* Iron Pyrites, Mispickel, and Galena, in quartz. *Loc.* Victoria Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3943. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Victoria and Caledonia Block Lease, Just-in-Time and Victoria Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3944. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Victoria and Queen G.M. Lease, Victoria and Caledonia Reefs, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3945. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Victory, Charters Towers G.M. Lease, Victory and Brilliant Reefs, Charters Towers Goldfield (*ante*). Average thickness of stone = 2 ft. Average value per ton = £4. *Ref.* W.C.T.

3946. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Victory G.M. Lease, Victory Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3947. Gold. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Wallis's Day Dawn Lease, Day Dawn Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3948. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Blue Peter Reef, in Blue Peter and Blue Peter No. 1 E. G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3949. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Bonnie Doon Reef, in Bonnie Doon Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3950. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Brilliant Reef, in Brilliant and St. George Utd.; Brilliant Central; Brilliant North; Brilliant Block; Brilliant Extd.; Brilliant P.C.; Bonnie Dundee; Charters Towers Deep Level Mines; East Mexican; Kelly's Queen Block; Marshall's Queen; New Brilliant Freeholds; New Queen; Papuan Brilliant and Victoria; Phœbe; and Victory, Charters Towers G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.Q. Pub. 224, p. 20 (1909).

3951. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Caledonia Reef, in New Craven's Caledonia; and Victoria and Queen G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

3952. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Day Dawn Reef, in Day Dawn Block and Wyndham; Day Dawn Gold Mines; Day Dawn School Reserve (Mills's United); Day Dawn P.C.; East Mexican; Mills's Day Dawn United; New Brilliant Freeholds; Pfeiffer's Day Dawn; and Wallis's Day Dawn G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T., and G.S.Q. Pub. 224 (1909).

3953. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Golden Alexandra Reef, in Golden Alexandra Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3954. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Hit or Miss Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3955. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Hope Reef, Millchester, 2 miles E.S.E. of Charters Towers, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3956. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Imperial Reef, in Imperial G.M. Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3957. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Just-in-Time Reef, in New Craven's Caledonia; Queen's Cross; and Victoria and Caledonia Block G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T., and G.S.M.

3958. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, Zinc Blende, and Barytes, in quartz and calcite. *Loc.* Lion Reef, in Carrington Lion 1 and 2 E. and Carrington United Mines, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3959. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Mafeking Reef, in Mafeking P.C., Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3960. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Mexican Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 28 (1879).

3961. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Millchester Reef, in Quinn's Block G.M. Lease and Roger's Millchester Block, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3962. ——. *Assoc.with* Iron Pyrites, Calcite, Gypsum, and Chalcedony, in quartz. *Loc.* North Australian Reef, in Talisman and New Dawn, and Day Dawn G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T., G.S.M., and P.R.S.Q., vol. 4, p. 36 (1887).

3963. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Old Identity Reef, in Millchester G.M. Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

3964. ——. *Assoc.with* Selenite, in quartz. *Loc.* Old Warrior Reef, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

3965. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Peabody Reef, in Talisman and New Dawn, and Day Dawn P.C. G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3966. ——. *Assoc.with* Iron Pyrites, Galena, Zinc Blende, Calcite, Gypsum, and Chlorite, in quartz. *Loc.* Queen Reef, in Brilliant Central, Bonnie Dundee, Marshall's Queen, New Queen, Queen Deep, and Bryan O'Lynn G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 26 (1879); P.R.S.Q., vol. 4, pp. 36-47 (1887), G.S.M., and W.C.T.

3967. ——. *Assoc.with* Iron Pyrites, in quartz *Loc.* Queenslander Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3968. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Rainbow Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3969. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Rose of England Reef, in Ruby G.M. Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3970. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Ruby Reef, in Ruby and Ruby United G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3971. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* St. George Reef, in Brilliant and St. George United G.M. Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3972. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Copper carbonate, Galena, and Zinc Blende, in quartz. *Loc.* Stockholm or Comstock Reef, in Stockholm (Brilliant) Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and P.R.S.Q., vol. 4 (1887).

3973. ——. *Assoc.with* Iron Pyrites and Galena, in serpentinous quartz. *Loc.* Sunlight Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

3974. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Talisman Reef, in Day Dawn P.C., Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3975. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Victoria Reef, in Band of Hope; New Craven's Caledonia; Papuan Brilliant and Victoria; Queen Central; Queen Central Block; Queen's Cross; Union Jack Consld. Mines; Victoria and Queen; and Victoria and Caledonia Block G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3976. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Victory Reef, in Brilliant and St. George Utd.; Brilliant Central; Bonnie Dundee; Clark's Brilliant; Worcester; and Victory; Kelly's Queen Block; Marshall's Queen; New Queen; Papuan Brilliant and Victoria; Phœbe; and Victory, Charters Towers G.M. Leases, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

3976A. ——. *Assoc.with* Silver, Anglesite, Massicot, and Cerussite, in lode. *Loc.* nr. Bluff Stn., 9 miles S.E. of Mt. Leyshon, 22 miles S.S.E. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* A.R., p. 260 (1910).

3976B. ——. *Assoc.with* Silver, Galena, Cerussite, and Limonite, in lode. *Loc.* ¾-mile E. of Mt. Leyshon, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

3976C. ——. *Assoc.with* Silver, Galena, Anglesite, Massicot, and Cerussite, in lode. *Loc.* Right-hand br. of One-mile Gully, 1½ mile S.E. of Mt. Leyshon. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

3977. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Galena, in quartz. *Loc.* Livingstone Reef, 1 mile S.S.E. of Bluff Stn., nr. Mt. Leyshon, 19 miles S.E.byS. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

3977A. —— in Arsenic, in quartz. *Loc.* Mary Lou Mine, 3 miles S.W. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* E.O.M.

3978. ——. *Assoc.with* Manganese-dioxide, in quartz. *Loc.* ½-mile N.E. of Mt. Deane, 6 miles E.byS. of Mt. Leyshon, 20 miles S.S.E. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

3979. ——. *Assoc.with* Iron Pyrites, Magnetite, Hematite, Limonite, Chalcanthite, Manganese-dioxide, and Talc, in quartz, quartzite, kaolin, volcanic breccia and porphyry rock. *Loc.* Mt. Leyshon Mine, 17 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.M., and G.S.Q. Pubs. 18, p. 2 (1885), and 73, p. 13 (1891).

3980. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Copper carbonates, in quartz. *Loc.* Mt. Leyshon Mine (*ante*). Average value per ton = 17s. 6d. *Ref.* W.C.T.

3981. ——. In vein of iron pyrites and quartz. Mt. Mawe, E. of Mt. Leyshon, 16 miles E.S.E. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 18, p. 2 (1887).

3981A. ——. Newhaven Prov. Goldfield, 24 miles W.N.W. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* A.R.D.M., p. 34 (*map*) (1905).

3982. ——. In porphyry. Wallaby Point, 1½ mile S. of Mt. Leyshon, 18½ miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.Q. Pub. 73, p. 13 (1891).

3983. ——. In ironstone. Above Cornish Jim's Tunnel, Pyramids or Seventy-mile Diggings, 3 miles N.byE. of Mt. Leyshon, 19 miles S. of Charters Towers (*ante*). *Ref.* G.S.M.

3984. ——. *Assoc.with* Iron Pyrites, Pyrrhotite (?), and Hematite. *Loc.* Greasy Bill's Reef, Pyramids or Seventy-mile Diggings (*ante*). *Yield:* Gold = 13 oz. per ton (?). *Ref.* G.S.Q. Pub. 1, p. 19 (1879).

3985. Gold. *Assoc.with* Iron Pyrites, Galena, and Pyrrhotite. *Loc.* Swan's Reef (late Cornish Jim's), Pyramids or Seventy-mile Diggings (*ante*). *Yield:* Gold = 100 oz. per ton (?). *Ref.* G.S.Q. Pub. 1, p. 19 (1879).

3986. ——. *Assoc.with* Silver, in quartz reef. *Loc.* Pyramids or Seventy-mile Diggings (*ante*). *Assay:* Gold = 6 oz. per ton; Silver = 16 oz. per ton. *Ref.* G.S.M.

3987. ——. *Assoc.with* Iron Pyrites. *Loc.* Top of Range, between the Charters Towers and Ravenswood Roads, nr. Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 2, p. 2 (1879).

3988. ——. In quartz. Windsor Block Mine, and Windsor Gold Mines, **Windsor Goldfield**, 22 miles S.S.W. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* A.R.D.M., p. 33 (1903).

3989. ——. *Assoc.with* Galena, etc., in quartz. *Loc.* Severn Reef, Broughton, 10 miles E.byS. of Charters Towers. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.M.

3990. ——. In quartz. Bank of England Lease, **Far Fanning**, 28 miles (by road) N.W. of Ravenswood Junction. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 133, p. 7 (1898).

3991. ——. *Assoc.with* Iron Pyrites, Mispickel, and Copper Pyrites, in quartz. *Loc.* Good Luck United (Lancashire Lass No. 1 W.) Mine, Far Fanning (*ante*). *Ref.* G.S.Q. Pub. 133, p. 7 (1898).

3992. ——. In quartz. Kitty O'Shea Mine, Far Fanning (*ante*). *Ref.* G.S.Q. Pub. 133, p. 8 (1898).

3993. ——. *Assoc.with* Iron Pyrites and Limonite, in quartz. *Loc.* Lancashire Lass Mine, Far Fanning (*ante*). *Ref.* G.S.Q. Pub. 133, p. 6 (1898), and G.S.M.

3994. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Spotted Calf Mine, Far Fanning (*ante*). *Ref.* G.S.Q. Pub. 133, p. 7 (1898), and G.S.M.

3995. ——. In quartz. Union Mine, Far Fanning (*ante*). *Ref.* G.S.Q. Pub. 133, p. 8 (1898).

3996. ——. *Assoc.with* Iron Pyrites, Malachite, Hematite, and Garnet. *Loc.* Hein's Lode, Limestone Range, W. of Double-Barrel Cr., 27 miles S.byW. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 77, p. 7 (1891), and G.S.M.

3997. ——. In quartz. Dot or Spark's Reef, at foot of Spur, Mt. Cook, **Magnetic Is.**, 5½ miles N. of Townsville. *Co.* Elphinstone (*ante*). *Assay:* Gold = 2 oz. 2 dwt. 1 gr. per ton; Silver = 11 dwt. 10 gr. per ton. *Ref.* G.S.Q. Pub. 75, p. 6 (1892), and G.S.M.

3998. ——. In quartz. Frederick Reef, head of Knight's Gully, Magnetic Is., (*ante*). *Ref.* G.S.Q. Pub. 75, p. 6 (1892).

3999. ——. In quartz. Head of Camoomilli Cr., Magnetic Is. (*ante*). *Ref.* G.S.Q. Pub. 75, p. 6 (1892).

4000. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* On beach E. of Hawking's Point, Magnetic Is. (*ante*). *Ref.* G.S.Q. Pub. 75, p. 7 (1892).

4001. ——. *Assoc.with* Iron Pyrites, in quartz reef. On flanks of Mt. Cook, Magnetic Is. (*ante*). *Ref.* G.S.Q. Pub. 75, p. 6 (1892).

4002. ——. *Assoc.with* Iron Pyrites and Zinc Blende, in quartz. *Loc.* Mt. Elliott, 20 miles S.E.byS. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.M.

4003. ——. *Assoc.with* Iron Pyrites, Limonite, and Zinc Blende, in quartz and calcite. *Loc.* Golden Valley Reef, **Mt. Success**, 15 miles N.N.W. of Ravenswood Junction (Gt. Northern line). *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 133, p. 10 (1898), and G.S.M.

4004. ——. *Assoc.with* Silver, in lode 36 ft. wide. *Loc.* Lease (278), Mt. Success (*ante*). *Estimated Contents:* Gold = 2½ oz. per ton; Silver = 6 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 58 (1897).

4005. ——. *Assoc.with* Silver, in lode 75 ft. wide. *Loc.* Little's Lease (280), Mt. Success (*ante*). *Estimated Contents:* Gold = 1 oz. per ton; Silver = 10 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 58 (1897).

4006. ——. *Assoc.with* Iron Pyrites and Zinc Blende, in quartz. *Loc.* Mt. Success Reef, Mt. Success (*ante*). *Ref.* G.S.Q. Pub. 133, p. 9 (1898), and G.S.M.

4007. ——. In quartz. Castle Hill, Townsville, 854 miles N.W. of Brisbane. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.M.

4008. ——. *Assoc.with* Galena and Zinc Blende, in quartz and calcite. *Loc.* Donnybrook Reef, Donnybrook Mining Centre, 6½ miles S. of Ravenswood Rail. Stn., **Ravenswood Goldfield.** *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

4009. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Erin's Hope Reef, Donnybrook Mining Centre (*ante*). *Ref.* G.S.Q. Pub. 152, p. 10 (1898).

4010. ——. In quartz. Day Dawn Reef, Donnybrook Mining Centre (*ante*). *Ref.* G.S.M.

4011. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz. *Loc.* New Consols Mine, Nil Desperandum Reef, Donnybrook Mining Centre (*ante*). *Assay:* Gold = 2 oz. 2 dwt. 2 gr. per ton; Silver = 10 oz. 18 dwt. per ton. *Ref.* G.S.M.

4011A.——. In quartz. Old Man and Beaumont Reefs, Four-mile Cr., 2 miles W. of Ravenswood Rail. Stn., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

4012. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. J.R.D. and Premier Reefs, Hillsborough (8-Mile), 3¾ miles N.N.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 9 (1900), and G.S.M.

4013. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz. *Loc.* Wey Reef, Hillsborough (8-Mile) (*ante*). *Ref.* G.S.M.

4014. ——. In quartz. Three Sisters Extd. and 1 S. Mines, and Crescent P.C., Kirk Diggings, 15 miles W. of Ravenswood, Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* A.R.D.M., p. 101 (1907).

4015. ——. *Assoc.with* Cerargyrite (Horn Silver). Old Silver Mine at One Mile, about 1¼ mile N. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* B.D.

4016. ——. *Assoc.with* Silver, Galena, and Cerussite, in quartz. *Loc.* Ravenswood Silver M. Co.'s Mine, One Mile, Ravenswood Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 47 (1887), and G.S.Q. Pub. 125, p. 34 (1897).

4017. ——. *Assoc.with* Iron Pyrites. *Loc.* Beaconsfield Mine, Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

4018. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Black Jack Reef, ¼-mile N.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1900), and G.S.M.

4019. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Tenorite, Malachite, Mispickel, and Zinc Blende, in quartz. *Loc.* Buck Reef, ½-mile S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Assay:* Gold = 2 oz. per ton. *Ref.* P.R.S.Q., vol. 4, pp. 53, 76 (1887), and G.S.Q. Pub. 152, p. 8 (1900).

4020. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Crescent S.M. Lease, New Moon Reef, Ravenswood Goldfield (*ante*). *Ref.* W.C.T.

4021. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* General Grant Reef, ½-mile S. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

4022. ——. In quartz.. Golden Crown Reef, Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

4023. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* London Reef, Elphinstone Cr., about 7 chains S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1900).

4024. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Zinc Blende. *Loc.* New England No. 1 S. Mine, Elphinstone Cr., ¼-mile N.W. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* A.R.D.M., p. 34 (1894).

4025. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Zinc Blende. *Loc.* New England Reef, Elphinstone Cr., ¼-mile N.W. of Ravenswood Rail. Stn. (*ante*). *Analysis: See* No. 5246. *Ref.* G.S.Q. Pub. 152, p. 7 (1900).

4026. ——. *Assoc.with* Copper Pyrites, in quartz. *Loc.* New Idea Reef, Ravenswood Goldfield, 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

4027. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Saratoga Mine, ¼-mile S.E. byS. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Yield:* Gold = 25 oz. per ton. *Ref.* G.S.Q. Pub. 152, p. 7 (1900), and G.S.M.

4028. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, and Zinc Blende, in quartz. *Loc.* Shellmalier Reef, 30 chains N.byE. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Yield:* Gold = 6 oz. per ton. *Ref.* G.S.Q. Pub. 152, p. 8 (1900), and G.S.M.

4029. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Sunset and General Grant Reef, ½-mile S. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 183, pp. 2-6 (1903).

4030. ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Sunset Reef, ½-mile S. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 ((1900).

4031. Gold. *Assoc.with* Iron Pyrites, etc., in quartz. *Loc.* Union Jack Mine, ¾-mile N.E.byN. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

4032. ——. *Assoc.with* Copper Pyrites and Zinc Blende, in quartz. *Loc.* Wild Irish Girl Mine, New England Reef, ¼-mile N.W. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1900).

4033. ——. In quartz. Deep Mines and Saratoga Leases (406 and 537), Golden Hill Lease (415), Grand Junction Consols Leases (503 and 520), London P.C. Lease (399), Overlander Lease (741), B.B. Extd. Mine, etc., Ravenswood Goldfield, 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* A.R.D.M., pp. 98, 99 (1907).

4034. ——. In quartz. *Loc.* Hadleigh Castle Mine and Captain P.C., Rochford Mining Centre, 18 miles W.byS. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* A.R.D.M., p. 89 (1896).

4035. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz. *Loc.* Australia Felix Mine, 2½ miles E.S.E. of Ravenswood Rail. Stn., Sandy Cr., Ravenswood Goldfield (*ante*). *Assay:* Gold = 20 oz. per ton. *Ref.* P.R.S.Q., vol. 4, p. 35 (1887).

4035A.——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Cousin Jack Reef, 2¼ miles S.E. of Ravenswood Rail. Stn., Sandy Cr. Mining Centre (*ante*). *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

4036. ——. *Assoc.with* Iron Pyrites and Galena. *Loc.* Fanny Fern Mine, 2½ miles S.E. of Ravenswood Rail. Stn., Sandy Cr. (*ante*). *Yield:* Gold = 6 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 35 (1897).

4037. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* John Bull Reef, about 3 miles E.S.E. of Ravenswood Rail. Stn., Sandy Cr. (*ante*). *Ref.* G.S.Q. Pub. 152, p. 8 (1900), and G.S.M.

4038. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in quartz and steatite. *Loc.* Politician Mine, 2½ miles S.E. of Ravenswood Rail. Stn., Sandy Cr. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 48 (1887), and G.S.Q. Pub. 152 p, 9 (1900).

4039. ——. *Assoc.with* Silver and Galena, in lead ochre. *Loc.* Comstock Silver Mine, 3½ miles S.E.byS. of Ravenswood Rail. Stn., and about 1 mile E. of Sandy Cr., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Assays:* (1) Gold = 1 oz. 13 dwt. per ton; Silver = 19 oz. 12 dwt. per ton; Lead = 14 per cent. (2) Silver = 81¾ oz. per ton; Lead = 73·5 per cent. *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

4040. ——. *Assoc.with* Iron Pyrites, Galena, and Cerussite, in quartz. *Loc.* Star of the South Reef, Connolly Cr., Trieste Mining Centre, 12 miles S.W.byS. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 10 (1900), and G.S.M.

4041. ——. In quartz. *Loc.* Tingleairy Extd. Mine, Trieste Mining Centre (*ante*). *Ref.* A.R.D.M., p. 100 (1907).

4042. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Trieste Reef, Trieste Mining Camp (*ante*). *Ref.* G.S.Q. Pub. 152, p. 10 (1900), and G.S.M.

4043. ——. *Assoc.with* Iron Pyrites. *Loc.* Mt. Wright, 6 miles N. of Ravenswood Rail. Stn., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

4044. ——. Strathalbyn Goldfield, 30 miles E.byS. of Ravenswood. *Co.* Gladstone (*ante*).

4044A.——. In quartz. **Allandale Prov. Goldfield,** about 3 miles S.E. of Thalanga Rail. Stn., 44 miles (by rail and road) S.W.byW. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* A.R.D.M., p. 34 (*map*) (1905).

4045. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* General Grant Reef, Mt. Davenport, 4 miles N.W. of Cape R. Rail. Stn., **Cape R. Goldfield.** *Co.* Griffith (*ante*). *Ref.* G.S.Q. Pub. 73, p. 2 (1891), and G.S.M.

4046. ——. *Assoc.with* Iron Pyrites and Hematite, in quartz. *Loc.* Union Reef, between Mt. Davenport and Davenport Cr., 4 miles N.W. of Cape R. Rail. Stn., Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 7, p. 2 (1891), and G.S.M.

4047. ——. *Assoc.with* Ironstone, in quartz *Loc.* Barcoo Reef, Mt. Remarkable, 6 miles W.byN. of Pentland Rail. Stn., Gt. Northern line, 72 miles (by rail and road) S.W.byW. of Charters Towers, Cape R. Goldfield (*ante*) *Ref.* G.S.Q. Pub. 73, p. 5 (1891).

4048. ——. *Assoc.with* Iron Pyrites, Galena, and Copper Pyrites, in quartz. *Loc.* Bell-Gay Reef, Mt. Remarkable (*ante*). *Ref.* G.S.Q. Pub. 73, p. 5 (1891).

4049. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Martin's Reef, Mt. Remarkable (*ante*). *Ref.* G.S.Q. Pub. 73, p. 5 (1891).

4050. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Governor Blackall and Victoria Reefs, Mt. Remarkable (*ante*). *Ref.* G.S.Q. Pub. 73, p. 4 (1891).

4051. ——. In quartz. Commissioner's, Duchess, Lone Star, and Morning Star Reefs, Mt. Remarkable (*ante*). *Ref.* G.S.Q. Pub. 73, pp. 3-5 (1891).

4052. ——. In quartz and kaolin leaders. Red, White, and Blue Claim, Paddy's Gully, Mt. Remarkable (*ante*). *Ref.* G.S.Q. Pub. 73, p. 6 (1891).

4052A.——. *Assoc.with* Silver, with traces of copper, lead, and bismuth. *Loc.* Paddy's Gully, Mt. Remarkable (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 37 (1887).

4053. ——. In quartz. Big Reef and Just-in-Time Reef, Pentland, 66 miles (by rail) S.W.byW. of Charters Towers, Cape R. Goldfield. *Co.* Griffith (*ante*). *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

4054. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Hayward Reef, Pentland (*ante*). *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

4055. ——. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Mystery Reef, Pentland (*ante*). *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

4056. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Hughes's Leader and Sarah Howson Reef, Pentland (*ante*). *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

4057. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Golden Hill Reef, "Springs." 2 miles W.S.W. of Pentland Rail. Stn., 68 miles (by rail and road) S.W.byW. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 4 (1891).

4058. ——. *Assoc.with* Limonite, in quartz. *Loc.* Springs Reef, "Springs" (*ante*). *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

4059. ——. *Assoc.with* Ironstone, Galena, and Iron Pyrites, in quartz. *Loc.* Harp of Erin Reef, Upper Cape Diggings, 17 miles W.byN. of Cape R. Rail. Stn., 77 miles (by rail and road) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

4060. ——. *Assoc.with* Galena, in quartz. *Loc.* Occidental Reef, Upper Cape Diggings, Cape River Goldfield. *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

4061. ——. *Assoc.with* Iron Pyrites and Ironstone, in quartz. *Loc.* Wheel of Fortune Reef, Upper Cape Diggings (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

4061A.—— (wire). *Assoc.with* Silver and Calcite, and with traces of copper, lead, and iron, in quartz. *Loc.* Upper Cape Diggings (*ante*). *Ref.* P.R.S.Q., vol. 4 (1887).

4062. ——. In veinlets of quartz. Green's Specimen Reef, on spur of Mt. Elvan, 1 mile N. of Upper Cape Diggings, 18 miles W.byN. of Cape Rail. Stn., Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 8 (1891).

4063. ——. In quartz leaders. Daunton's Hill, Gorge Cr., Mt. Elvan (*ante*). *Ref.* G.S.Q. Pub. 73, p. 8 (1891).

4064. ——. In quartz leaders. Surface Hill, Gorge Cr., Mt. Elvan (*ante*). *Ref.* G.S.Q. Pub. 73, p. 8 (1891).

4065. ——. *Assoc.with* Manganese-dioxide and Iron Pyrites, in quartz. *Loc.* Lissner Reef, 7 miles W.N.W. of Lamond's Rail. Stn., Gt. Northern line, 41 miles (by rail and road) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 13 (1891).

4066. ——. In quartz. Ada Reef, New **Homestead Diggings**, 46 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith (*ante*). *Ref.* G.S.Q. Pub. 73, p. 12 (1891).

4067. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Galena, in quartz. *Loc.* Agnes Howson Reef, New Homestead Diggings (*ante*). *Ref.* G.S.Q. Pub. 73, p. 12 (1891).

4068. ——. In quartz. Callaghan, Evening Star, and Wild Scotchman Reefs, New Homestead Diggings (*ante*). *Ref.* G.S.Q. Pub. 73, pp. 5-12 (1891).

4069. ——. In quartz. Denison's, Klasted and Party's, Lind and Party's, and Whistling Tom Reefs, Old Homested Diggings, 46 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North *Ref.* G.S.Q. Pub. 73, p. 12 (1891).

4070. ——. *Assoc.with* Mispickel. *Loc.* High Bar Reef, Old Homestead Diggings (*ante*). *Ref.* G.S.Q. Pub. 73, p. 12 (1891).

4071. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Higham Reef, Old Homestead Diggings (*ante*). *Ref.* G.S.M.

4072. ——. *Assoc.with* Silver, Iron Pyrites, Redruthite, Copper carbonate, and Galena, in quartz. *Loc.* Main's Reef, Old Homestead Diggings (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 73, p. 11 (1891), and G.S.M.

4073. Gold. *Assoc.with* Cuprite, Malachite, and Hematite. *Loc.* Copper King Mine, **Happy Valley,** 1½ mile from Lamington Mine, 41½ miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Assay:* Gold = 1 dwt. 13 gr. per ton; Copper = 2 per cent. *Ref.* A.R., p. 62 (1906).

4074. ——. *Assoc.with* Copper, in ferruginous quartz. *Loc.* Albion Reef, **Marengo Goldfield,** 24 miles S.S.W. of Bowen. *Co.* Herbert (*ante*). *Ref.* G.S.Q. Pub. 5, p. 12 (1879).

4075. ——. *Assoc.with* Carbonate of Copper. *Loc.* Manchester Reef, Marengo Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 12 (1879).

4076. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Copper carbonate, Yellow Ochre, in quartz. *Loc.* Seymour's Reef, Marengo Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

4077. ——. *Assoc.with* Silver, Iron Pyrites, Copper Pyrites, Azurite, and Malachite, in quartz. *Loc.* Venture Reef, Marengo Goldfield (*ante*). *Assay:* Gold = 1 oz. 6 dwt. 3 gr., Silver = 6 oz. 12 dwt. per ton. *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

4078. ——. *Assoc.with* Tourmaline (fibrous), in quartz vein. *Loc.* Morres's Run, near Euri Cr., 18 miles W.S.W. of **Bowen.** *Co.* Herbert; *Dist.* Kennedy North. *Ref.* G.S.M.

4078A. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Limonite, in quartz. *Loc.* Lady Augusta P.A. (129), Moss Vale Stn., nr. Euri Cr., about 7 miles S.W. of Bowen. *Co.* Herbert (*ante*). *Ref.* A.R., p. 269 (1910).

4079. ——. In serpentine. Burdekin, 9 miles above Cardigan Stn., Charters Towers. *Co.* Murray; *Dist.* Kennedy North. *Ref.* G.S.M.

4080. ——. In quartz. Canton Reef, nr. Canton Range, 13 miles S. of Ravenswood Rail. Stn. *Co.* Murray (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 152, p. 10 (1900).

4081. ——. In quartz leader Albion, Clinker, and Queenslander Reefs, **Dreghorn Diggings,** 15 miles S. of Ravenswood Rail. Stn. *Co.* Murray (*ante*). *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

4082. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Currency Reef, Dreghorn Diggings (*ante*). *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

4083. ——. *Assoc.with* Hematite and Iron Pyrites, in quartz. *Loc.* Ellen Boss Reef, Dreghorn Diggings (*ante*). *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

4084. ——. *Assoc.with* Copper Pyrites and Malachite, in quartz. *Loc.* Overland Reef, between Dreghorn and Burdekin R., 14 miles S. of Ravenswood Rail. Stn. *Co.* Murray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

4085. ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, and Chalcanthite, in quartz reef in granite. *Loc.* Continong Mine, Burdekin R., 70 miles W. of Townsville. *Co.* O'Connell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 35, p. 12 (1887), and G.S.M.

4086. ——. In quartz reef. On Bowen-Normanby road, Don R., towards spur of Bode's Range, 6 miles S. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 88, p. 5 (1893).

4087. ——. *Assoc.with* Silver and Iron Pyrites, in quartz reef. *Loc.* Bowden Sel. (147), **Star R. (Argentine) Mineral Field,** 50 miles (by coach) N.W. of Ravenswood Junction, Gt. Northern line, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.M.

4088. ——. *Assoc.with* Tenorite and Malachite, in quartz reef. *Loc.* Excelsior Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886), and G.S.M.

4089. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Gt. Kennedy Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.M.

4090. ——. In quartz reef. Nil Desperandum Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.M.

4091. ——. In quartz reef. Southern Cross Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886), and G.S.M.

4092. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Struck Oil Lode, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886), and G.S.M.

4093. ——. *Assoc.with* Galena and Hematite, in quartz. *Loc.* Thermopylæ Reef, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

4094. ——. *Assoc.with* Iron Pyrites, Galena, Cerussite, Anglesite, Minium, Siderite, and Zinc Blende, in quartz reef. *Loc.* Union Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886), and G.S.M.

4095. ——. In quartz. Piccadilly P.C., **Piccadilly Goldfield,** 60 miles N.W. of Ravenswood Junction. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* A.R.D.M., p. 102 (1907).

4096. ——. In ironstone quartz reef. *Loc.* Uncle Leaper P.C., Alligator Cr., 10 miles S.byE. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Assays:* (1) Gold = 31 oz. 10 dwt., (2) Gold = 15 oz. 10 dwt., (3) Gold = 27 oz. 15 dwt., Silver = 2 oz. 16 dwt. per ton. *Refs.* A.R.D.M., p. 56 (1889), and G.S.Q. Pubs. 54, p. 3 (1889), and 93, p. 8 (1893).

4097. ——. In quartz. Annie, Coral Tree 1 E. and 1 W., Eureka, Highland Mary 1 E. and Martin's Mines, Bee Cr. Diggings, Broken R., **Eungella Goldfield,** 10 miles W. of Finch Hatton Rail. Stn. (Mackay line), 48 miles W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 3 (1889), 229, p. 29 (1910).

4097A.——. *Assoc.with* Iron Pyrites, Copper Pyrites, Limonite, Turgite, Ironstone, and Galena, in quartz. *Loc.* Broken R. Gold and Silver Co.'s Mine, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pubs. 54, pp. 2, 3 (1889), 229, pp. 31, 32 (1910).

4097B.——. *Assoc.with* Iron Pyrites and Wulfenite, in quartz. *Loc.* Buttercup Reef, Bee Cr. Diggings. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 229, p. 28 (1910).

4098. ——. *Assoc.with* Iron Pyrites, Siderite, Zinc Blende, and Galena, in quartz reef. *Loc.* Coral Tree P.C., Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), 229, p. 29 (1910).

4099. ——. *Assoc.with* Iron Pyrites, in quartz. Golden Crown Mine, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

4099A.——. *Assoc.with* Limonite and Malachite, in quartz. *Loc.* Highland Chief Reef, Bee Cr. Diggings (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 229, p. 30 (1910).

4100.——. *Assoc.with* Iron Pyrites, Limonite, Siderite, Copper Pyrites, Malachite, Galena, and Zinc Blende, in ferruginous quartz. *Loc.* Highland Mary P.C., Bee Cr. Diggings (*ante*). *Ref.* (and *Assay*) G.S.Q. Pubs. 54, p. 2 (1889), and 229, p. 30 (1910).

4101. ——. *Assoc.with* Silver, in quartz. *Loc.* Junction P.C., Bee Cr. Diggings (*ante*). *Assay:* Gold = 2 oz. per ton; Silver = 5 oz. per ton. *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

4101A.——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Landslip Reef, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 229, p. 30 (1910).

4101B.——. *Assoc.with* Galena, in gossany ore. *Loc.* Lord Nolan (Queen) Reef, Bee Cr. Diggings (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 229, p. 31 (1910).

4101C.——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Phœnix Mine, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

4102. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Queen Reef, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

4103. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Lady Norman Reef, left bank of Broken River, 10 miles S. of Bee Creek Diggings. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

4104. ——. *Assoc.with* Silver, in lode. *Loc.* Block (6), Eungella Run, Broken R., 30 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* O.M.

4105. ——. In quartz. Orchid Mine, Eungella Goldfield, 10 miles W. of Finch Hatton Rail. Stn. (Mackay line), 48 miles (by rail and road) W.S.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.M.

4106. ——. *Assoc.with* Copper Pyrites, Tile Ore, and Malachite, in lode. *Loc.* Shaft, nr. Old Orchid No. 1 N. Claim, Eungella Goldfield (*ante*). *Ref.* A.R., p. 155 (1908).

4107. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz. *Loc.* One Mile, E. of Eungella Stn., Broken R., 30 miles W. of Mirani Rail. Stn. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 39, p. 6 (1887).

4108. ——. In quartz. Argonaut, Dickisson's, Lynch's, and Walsh's Leases, **Grass-tree Goldfield,** 17 miles S.byE. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 93, pp. 5-8 (1893).

4109. ——. In kaolin lode. Barker's Lease, Grass-tree Goldfield (*ante*). *Ref.* G.S.Q. Pub. 93, p. 4 (1893).

4110. ——. In veins of ironstone, in diorite dyke. *Loc.* Burton's Lease, Grass-tree Goldfield (*ante*). *Ref.* G.S.Q. Pub. 93, p. 7 (1893).

4111. ——. *Assoc.with* Limonite, in quartz. *Loc.* Captain Brown's Lease, Grass-tree Goldfield (*ante*). *Ref.* G.S.Q. Pub. 93, p. 8 (1893).

4112. ——. *Assoc.with* Ironstone, in veins of quartz, in felspathic quartzose lode. *Loc.* Golden Cross Lease, Grass-tree Goldfield (*ante*). *Ref.* G.S.Q. Pub. 93, p. 4 (1893).

4113. Gold. In felspathic and quartzose formation. *Loc.* Griffith and Black's Lease, Grass-tree Goldfield (*ante*). *Ref.* G.S.Q. Pub. 93, p. 5 (1893).

4114. ——. In lode, veined with quartz and ironstone. *Loc.* Logan's Lease, Grass-tree Goldfield (*ante*). *Ref.* G.S.Q. Pub. 93, p. 7 (1893).

4115. ——. In siliceous and felspathic lode. *Loc.* Taylor's Lease, Grass-tree Goldfield (*ante*).. *Ref.* G.S.Q. Pub. 93, p. 6 (1893).

4116. ——. In kaolin lode. Zelma Mine, Grass-tree Goldfield (*ante*). *Ref.* G.S.Q. Pub. 93, p. 2 (1893).

4117. ——. *Assoc.with* Ironstone, in quartz reef *Loc.* Bell's Sel. (615), S. of Mt. Chalona, 16 miles S.E.byS. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 39, p. 3 (1887).

4118. ——. *Assoc.with* Silver, Copper Pyrites, Hematite, Bismutite, and Mispickel, in quartz veins. *Loc.* Gold Workings, Mine Cr., nr. Black Waterhole Cr., 2 miles N.byE. of Hazledean, 37 miles S.W. of Mackay, **Mt. Spencer Goldfield.** *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 164, p. 10 (1901).

4119. ——. *Assoc.with* Limonite, in quartz. *Loc.* Sel. (661), on hill nr. Mackay, 172 miles N.W.byN. of Rockhampton. *Co.* Carlisle (*ante*). *Assays:* (1) Gold = 1 oz. 5 dwt. per ton; (2) Gold = 3 oz. 12 dwt. per ton. *Ref.* G.S.Q. Pub. 39, p. 3 (1884).

4120. ——. *Assoc.with* Silver, in quartz. *Loc.* Albion Reef, **Normanby Goldfield,** 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 5, p. 7 (1879).

4121. ——. In quartz. Black Snake Reef, Hibenia Lease (16), and Monte Christo Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 5, p. 2 (1879), 88, pp. 3, 4 (1893), and G.S.M.

4122. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz. *Loc.* Enterprise Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 8 (1879).

4123. ——. *Assoc.with* Iron Pyrites and Copper carbonate, in quartz. *Loc.* Eureka Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 5, p. 10 (1879), 88, p. 4 (1893), and G.S.M.

4124. ——. *Assoc.with* Iron Pyrites and Copper carbonate, in quartz. *Loc.* Faith (Just-in-Time) Reef, Normanby Goldfield (*ante*). *Assay:* Gold = 6 oz. 4 dwt. 3 gr. per ton. *Ref.* G.S.Q. Pubs. 5, p. 8 (1879), 88, p. 5 (1893), and G.S.M.

4125. ——. *Assoc.with* Copper Pyrites, Mispickel, and Siderite, in quartz reef. *Loc.* Faith (Just-in-Time) Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 88, p. 5 (1893).

4126. ——. *Assoc.with* Mispickel, Marcasite, and Copper Pyrites, in quartz. *Loc.* Frederick I. Reef, Peter's Cr., Normanby Goldfield (*ante*). *Assay:* Gold = 2½ oz. per ton. *Ref.* G.S.Q. Pub. 88, p. 1 (1893), and G.S.M.

4127. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz. *Loc.* Glengarry Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 5, p. 6 (1879), and 88, p. 3 (1893).

4128. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Tetrahedrite, Mispickel, Siderite, Ironstone, and Yellow Ochre, in quartz. *Loc.* Grace Darling Lease (11), Normanby Goldfield (*ante*). *Assay:* Gold = 16 oz. 6 dwt. 16 gr. per ton. *Ref.* G.S.Q. Pubs. 5, p. 6 (1879), and 88, p. 3 (1893).

4128a.——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Lady O'Reilly Mine, Normanby Goldfield (*ante*). *Assay:* Gold = 3 oz. 3 dwt. 5 gr., Silver = 2 oz. 9 dwt. 19 gr. per ton. *Ref.* A.R., p. 153 (1908).

4129. ——. In quartz. Lardyda Reef, Oakey Cr., Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 9 (1879).

4130. ——. *Assoc.with* Copper Pyrites and Copper carbonate, in quartz. *Loc.* Marquis Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 3 (1879).

4131. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Mt. Flat-top, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 9 (1879).

4132. ——. *Assoc.with* Copper carbonate, in quartz. *Loc.* New Zealand Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 4 (1879).

4133. ——. *Assoc.with* Silver and Iron Pyrites, in quartz. *Loc.* Perseverance Reef, Normanby Goldfield (*ante*). *Assay:* Gold = 1 oz. 4 dwt., Silver = 7 dwt. per ton. *Ref.* A.R., p. 161 (1908).

4134. ——. *Assoc.with* Copper Pyrites and Iron Pyrites, in quartz. *Loc.* Star of Hope Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 4 (1879), and G.S.M.

4135. ——. *Assoc.with* Copper Pyrites and Azurite, in quartz. *Loc.* True Blue Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 88, p. 4 (1893).

4135A. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Venture Reef, Normanby Goldfield (*ante*).

4136. ——. *Assoc.with* Marcasite, Iron Pyrites, Copper Pyrites, and Mispickel, in quartz and steatite. *Loc.* Victor Tunnel, Normanby Goldfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 88, p. 5 (1893).

4137. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, and Copper carbonate, in quartz. *Loc.* Welcome Reef, Normanby Goldfield (*ante*). *Assay:* Gold = 8 oz. 9 dwt. 20 gr., Silver = 1 oz. 12 dwt. 16 gr. per ton. *Ref.* G.S.Q. Pubs. 5, p. 5 (1879), 88, p. 2 (1893), and G.S.M.

4138. ——. In quartz. *Loc.* Wild Scotchman Reef, Mt. High, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 9 (1879).

4139. ——. *Assoc.with* Copper carbonate, in quartz. *Loc.* Reef, S.W. of Just-in-Time Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 8 (1879).

4140. ——. *Assoc.with* Iron Pyrites, Ironstone, Malachite, and Chlorite, in quartz reef. *Loc.* Spring Cr., Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 7 (1879).

4141. ——. *Assoc.with* Copper Pyrites, Tetrahedrite, Tenorite, Malachite, Azurite, Galena, and Ironstone, in quartz lode. *Loc.* Pine Vale Copper Mine, 9 miles S.byE. of Eton Rail. Stn., 32 miles (by rail and road) S.byW. of Mackay, **Mt. Spencer Gold and Mineral Field.** *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), 181, p. 19 (1903), and 229, pp. 12-17 (1910).

4142. ——. In quartz leaders. Yankee Flat, Miclere, 20 miles N.byW. of Clermont. *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 103, p. 13 (1895).

4143. ——. In quartz leaders. Seven-mile, Copperfield, Aramac road, 16 miles N.W. of Clermont. *Co.* Rutledge; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 201, p. 75 (1906).

4144. ——. In quartz. New Reef and Pioneer Reef (Western Reefs), 25 miles N.W. of Clermont. *Co.* Rutledge (*ante*). *Ref.* G.S.Q. Pubs. 176, p. 16 (1902), and 201, p. 79 (1906).

4145. ——. *Assoc.with* Bismuthinite and Bismutite. *Loc.* Carrington Bismuth Mine, Sellheim R., **Sellheim Mineral Field,** 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.M.

4146. ——. *Assoc.with* Galena, Copper Pyrites, Cuprite, Malachite, Azurite, Native Bismuth, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Hematite, and Ironstone. *Loc.* Daisy Bismuth Mine, Ukalunda, Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 57, pp. 7, 8 (1889), and G.S.M.

4147. ——. *Assoc.with* Mispickel, Minium, and Galena, in lode. *Loc.* Venture Silver Mine, Sellheim Mineral Field (*ante*) *Assays:* Gold = 6 oz. 5 dwt., and 5 oz. 6 dwt. per ton. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

4148. ——. In quartz reef. **Mt. Wyatt Goldfield,** 60 miles S.S.E. of Ravenswood. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* A.R.D.M., 1895, pp. 92.

4148A. ——. In quartz. Callan's Claim, 3 miles S. of Clermont, **Clermont Goldfield.** *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 201, p. 82 (1906).

4149. ——. In quartz leaders. Crane's Mine, near New Idea Claim, 3½ miles S.S.E. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 201, p. 81 (1906).

4150. ——. *Assoc.with* Ironstone. *Loc.* Cumberland Reef, 1 mile N. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 4 (1886).

4150A. ——. *Assoc.with* Hematite, in a large siliceous body, in slate country. *Loc.* Leviathan Mine, Clermont Goldfield (*ante*). *Ref.* B.D.

4151. ——. *Assoc.with* Ironstone, in quartz and limestone. *Loc.* Lincoln Leaders, 2½ miles S.W. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 176, p. 22 (1902).

4152. ——. In quartz. Mystery No. 1 W., S. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 201, p. 81 (1906).

4153. ——. *Assoc.with* Siderite, in quartz. *Loc.* New Idea Mine, 3½ miles S.S.E. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 201, p. 80 (1906).

4154. ——. In quartz. Old Mystery Mine, S. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 201, p. 80 (1906).

4155. ——. In quartz. Sultan Reef, nr. head of Madden Gully, 2½ miles S. of Clermont, Clermont Goldfield (*ante*).

4156. ——. In clayey cement and quartz. *Loc.* Venus Reef, nr. 4-Mile Flat, 15 miles N.W. of Clermont, Clermont Goldfield (*ante*) *Ref.* G.S.Q. Pubs. 27, p. 4 (1886), 176, p. 17 (1902).

4157. ——. In quartz. Bismarck, Homeward Bound, and Welcome Reefs, Copperfield, 5 miles S.S.W. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 27, pp. 5-7 (1886).

4158. Gold. *Assoc.with* Galena and Iron Pyrites, in quartz. *Loc.* Crown Reef, Copperfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 6 (1886).

4159. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Palm-tree Reef, Copperfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 6 (1886).

4160. ——. *Assoc.with* Copper oxides, Copper carbonates, Manganese-dioxide, and Hematite, in gossan lode. *Loc.* Peak Downs Copper Mine, Copperfield (*ante*). *Assay:* Gold = 14 dwt. to 1 oz. 15 dwt., and Silver = 5 oz. per ton. *Ref.* G.S.Q. Pub. 27, p. 7 (1886).

4161. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz and chlorite. *Loc.* Star of Hope Reef, Copperfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 5 (1886).

4162. ——. In slate and diorite. Caldwell's Claim, 12-Mile Diggings, Big Ti-tree Gully, Brewery Cr., 12 miles S.W. of Copperfield, Clermont Goldfield. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 201, p. 83 (1906).

4163. ——. In quartz. Christmas, Croydon, Doctor's, Grick's, Lady Eleanor, Peter the Greek's, Prince of Wales, Robertson's, and St. Patrick's Reefs, McDonald's Flat, 3½ miles S.S.E. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 27, p. 7 (1886), 176, pp. 18, 19 (1902), and G.S.M.

4164. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Bedsford Reef, McDonald's Flat (*ante*). *Ref.* G.S.Q. Pub. 176, p. 19 (1902).

4165. ——. *Assoc.with* Iron Pyrites, Siderite, Magnesite, and Dolomite, in quartz. *Loc.* Biddy Walsh Reef, McDonald's Flat (*ante*). *Ref.* G.S.Q. Pub. 176, p. 18 (1902).

4166. ——. *Assoc.with* Marcasite, in quartz. *Loc.* Somersetshire Reef, McDonald's Flat (*ante*). *Ref.* G.S.Q. Pub. 27, p. 6 (1886), and Q.M

4167. ——. *Assoc.with* Copper Pyrites, Bornite, Chalcanthite, and Copperas, in diorite and slates. *Loc.* Mt. Clifford Mine (Rainbow, New Find, King, Queen, and Eastern Reefs), between Retreat and Ruby Crs., Mt. Clifford, 9½ miles (by road) N.W. of Anakie Rail. Stn. (Central line). *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 127, p. 2 (1898).

4168. ——. *Assoc.with* Limonite and Magnetite, in quartz and lydianstone. *Loc.* Oswald Mine, Mt. Clifford (*ante*). *Ref.* G.S.Q. Pub. 127, p. 3 (1898).

4169. ——. *Assoc.with* Hematite and Limonite, in gossan. *Loc.* Stewart and Spier's Mine, Mt. Clifford (*ante*). *Ref.* G.S.Q. Pub. 127, p. 3 (1898).

4170. ——. *Assoc.with* Limonite and Hematite, in slate. *Loc.* N. of Policeman Cr., 9 miles N. of Anakie Rail. Stn. (Central line). *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 172, p. 4 (1902).

4171. ——. *Assoc.with* Iron Pyrites and Hornblende, in quartz. *Loc.* Camboon Mine, Camboon, Upper Dawson R., 114 miles N.W.byW. of Mt. Perry Rail. Stn. *Co.* Dawson; *Dist.* Leichhardt. *Ref.* G.S.M.

4172. ——. *Assoc.with* Hyalite, in trachyte. *Loc.* Minerva Cr., Springsure, 206 miles (by rail) W.S.W. of Rockhampton. *Co.* Denison; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 103, pp. 9, 10 (1895).

4173. ——. In quartz. Koffman Diggings, Rannes, 62 miles S.byW. of Rockhampton. *Co.* Ferguson; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 8 (1901).

4174. ——. In felsite. General Gordon Mine, Yatton Goldfield, 21 miles S.W. of St. Lawrence. *Co.* Killarney; *Dist.* Liechhardt. *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

4175. ——. In calcite and quartz. Hidden Treasure Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

4176. ——. *Assoc.with* Calcite and Siderite, in quartz. *Loc.* Mountain Maid Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

4177. ——. *Assoc.with* Copper Pyrites, Chalcanthite, Orthoclase, and Calcite, in quartz. *Loc.* Red Streak Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, pp. 7, 8 (1887).

4178. ——. *Assoc.with* Ironstone and Calcite, in quartz. *Loc.* Southern Cross Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

4179. ——. *Assoc.with* Iron Pyrites, Siderite, Calcite, Steatite, and Felspar, in quartz. *Loc.* St. Catherine Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

4180. ——. In felsite. Union Jack Mine, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

4181. —— (containing Silver). *Assoc.with* Mispickel and Malachite, in quartz. *Loc.* Ironbark Mine, Miner's Cr., nr. Sandy Cr., Whelan Cr., Collaroy, 25 miles N.W. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Assay:* Gold = 2 dwt. 7 gr., Silver = 1 oz. 16 dwt. 2 gr. per ton. *Ref.* G.S.Q. Pub. 141, p. 4 (1898).

4182. ——. In quartz and clay. Paddy's Cr., 1½ mile S.W. of **Rookwood** Stn., 44 miles W.byS. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 9 (1901).

4183. ——. *Assoc.with* Ironstone, in serpentine. *Loc.* Mt. Blowhard (Mt. Hope), 52 miles S.S.W. of Rockhampton. *Co.* Pakington; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 8 (1901).

4184. ——. In quartz. Gt. Kauffman and Jubilee Mines, **Rannes Goldfield,** 32 miles S. of Westwood Rail. Stn. (Central line), 63 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Pakington (*ante*). *Ref.* A.R.D.M., p. 48 (1887), and G.S.M.

4185. ——. In calcite and quartz. Erratic Star Reef, Nuggety Gully, **Mt. Britton Goldfield,** 75 miles S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

4186. ——. *Assoc.with* Iron Pyrites, in quartz and calcite. *Loc.* Keeley and Valentine's Claim, Nuggety Gully (*ante*). *Assays:* (1) Gold = 3 oz. 5 dwt. 8 gr. per ton. (2) Gold = 1 oz. 13 dwt. per ton. (3) Gold = 1 oz. 11½ dwt. per ton. *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

4187. ——. In quartz and calcite. *Loc.* Little Wanderer Reef, Nuggety Gully (*ante*). *Ref.* G.S.Q. Pub. 39, p. 4 (1887), and G.S.M.

4188. ——. In quartz and calcite. Union Reef, Nuggety Gully (*ante*). *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

4188A. ——. *Assoc.with* Silver, Iron Pyrites, and Copper, in quartz. *Loc.* "Tally Ho" Claim, Mt. Spencer Run, about 10 miles S. of Eton Rail. Stn. (**Mackay** line). *Co.* Wodehouse (*ante*). *Ref.* A.R., p. 284 (1910), and p. 317 (1911).

4189. —— (traces). *Assoc.with* Silver, Tile Ore, Minium, and Copper carbonate, in ferruginous quartz and steatite. *Loc.* Reef or Lode, 4 miles N.W. of junction of Terawoomba and Boothill Crs., 50 miles S.S-W. of Mackay. *Co.* Wodehouse (*ante*). *Assay: See* No. 7505. *Ref.* G.S.Q. Pub. 39 (1887).

4190. ——. *Assoc.with* Silver, Iron Pyrites, Mispickel, Galena, and Zinc Blende, in silicious gangue. *Loc.* Silver and Lead Deposits (Por. 46), Par. of Monsildale, 35 miles N.byW. of Esk Rail. Stn. *Co.* Canning; *Dist.* **Moreton.** *Ref.* (and *Assays*) G.S.Q. Pub. 169, pp. 2, 3 (1901).

4191. ——. *Assoc.with* Malachite and Ironstone, in quartzite. *Loc.* Blackbutt, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton.

4192. ——. *Assoc.with* Silver (ore) and Bismuth (native). *Loc.* Emu Cr., about 10 miles N.W. of Toogoolawah Rail. Stn. (Brisbane-Valley line), 89 miles (by rail and road) W.N.W. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* O.M.

4193. ——. *Assoc.with* Cassiterite, Wolfram, and Ilmenite, in quartz reef. *Loc.* **Crow's Nest,** 34 miles (by rail) N. of Toowoomba, 135 miles (by rail) W.byN. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 175, p. 4 (1902).

4193A. ——. *Assoc.with* Bismuthinite, in granite. *Loc.* Dattu Dattu Mine, about 25 miles N.N.E. of Crow's Nest Rail. Stn. *Co.* Cavendish (*ante*). *Ref.* (and *Assays*) Q.G.M.J., vol. 4, p. 188 (1903).

4194. ——. In quartz veins in granite. *Loc.* Near Milford Rocks Head Stn., 23 miles N.byW. of Esk Rail. Stn. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 169, p. 7 (1901).

4195. ——. *Assoc.with* Massicot, Galena, and Zinc Blende, in gossany quartz. *Loc.* Iceberg P.A., Emu Cr., **Mt. Langan,** 14½ miles W.N.W. of Kannungar Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Ref.* L.C.B., and Q.G.M.J., p. 467 (1906).

4195A. ——. *Assoc.with* Silver, Galena, and Zinc Blende, in lode. *Loc.* Langan's Mine, Mt. Langan (*ante*). *Ref.* A.R., p. 213 (1910).

4196. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Massicot, Anglesite, Galena, Mispickel, and Limonite, in gossan and slate. *Loc.* Silver Knob P.A., Emu Cr., Mt. Langan (*ante*). *Assay: See* No. 3033. *Ref.* L.C.B., and Q.G.M.J., p. 467 (1906).

4197. ——. *Assoc.with* Iron Pyrites, Massicot, Cerussite, Cassiterite, Bismuth, and Calcite, in kaolinised greisen. *Loc.* Snowdrop P.A., Emu Cr., Mt. Langan (*ante*). *Ref.* L.C.B., and Q.G.M.J., p. 467 (1906).

4198. ——. *Assoc.with* Silver, Lead, and Bismuth, in clay. *Loc.* Mt. Langan, nr. Blackbutt, 32 miles N.W. of Esk Rail. Stn. (Brisbane-Valley Br. line), 91 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Assay: See* No. 7507. *Ref.* A.R., p. 69 (1906).

4199. ——. *Assoc.with* Native Bismuth, in steatite. *Loc.* **Nanango Goldfield,** 135 miles (by rail) S.S.W. of Maryborough. *Co.* Cavendish (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 44 (1887).

4200. Gold. *Assoc.with* Silver. *Loc.* Mt. Powers, Nanango Goldfield (*ante*). *Ref.* A.R., p. 71 (1906).

4201. ——. *Assoc.with* Iron Pyrites, Mispickel, and Tourmaline, in quartz reef. *Loc.* Seven-mile Diggings, 7 miles S.E. of Nanango Goldfield, 123 miles N.W.byN. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* Q.G.M.J., p. 525 (1906).

4202. ——. In the debris shed from a dyke. *Loc.* W side of Diggings Gully, Seven-mile Diggings (*ante*). *Ref.* Q.G.M.J., p. 525 (1906).

4203. ——. *Assoc.with* Ironstone, Copper Oxide, and Malachite, in quartz. *Loc.* Black Diamond Mine, nr. **Taromeo**, 6 miles N.N.W. of Benarkin Rail. Stn., 117 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Assay:* Gold = 3 dwt. 22 gr. per ton; Silver = 5 dwt. 5 gr. per ton; Copper = trace. *Ref.* G.S.Q. Pub. 159, p. 25 (1901).

4204. ——. In gossan and quartz veins. Red Queen Mine, nr. Taromeo (*ante*). *Assays:* (1) 3 dwt. of Silver per ton, traces of Gold. (2) 10 dwt. of Silver per ton, 3 dwt. of Gold per ton. (3) 13 dwt. of Silver per ton, 13 dwt. of Gold per ton. All contain traces of Copper. *Ref.* G.S.Q. Pub. 159, p. 25 (1901).

4205. ——. *Assoc.with* Silver and Copper. Near Taromeo (*ante*). *Assays:* (1) Gold = 2 dwt., Silver = 4 oz. 10 dwt. 19 gr. per ton. (2) Gold = 1 dwt. 5 gr., Silver = 2 oz. 6 dwt. per ton; Copper = 0·27 per cent. (3) Gold = 19 gr., Silver = 2 oz. 11 dwt. 13 gr. per ton; Copper = 1·36 per cent. *Ref.* A.R., p. 71 (1906).

4206. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* On Pors. 236, 241A, and 289, Par. of **Indooroopilly**, Gold Cr., Brookfield, 10 miles (by rail) W.S.W of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Assay:* Gold = 8 gr. per ton. *Ref.* G.S.Q. Pub. 108, p. 25 (1896).

4207. ——. *Assoc.with* Iron Pyrites and Galena, in quartz reefs. *Loc.* Sel. (194), Brookfield Cr. (*ante*). *Ref.* G.S.Q. Pub. 63, p. 2 (1890).

4208. ——. In quartz. Gravel Reserve, Par. of Capalaba, about 65 chains S. of Wellington Point Rail. Stn. (**Cleveland** line), 19 miles (by rail) E. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* O.M.

4209. ——. In quartz. Por. (117), Par. of Capalaba, 2½ miles S.S.W. of Cleveland Rail. Stn., 14 miles S.byE. of Brisbane. *Co.* Stanley (*ante*). *Ref.* O.M.

4210. ——. In quartz. Cleveland G.P. Co.'s Mine, about 12 chains S.S.W. of Cleveland, 23 miles (by rail) E. of Brisbane. *Co.* Stanley (*ante*). *Ref.* O.M.

4211. ——. In quartz. William's Gold Mine, about 16 chains S.W. of Cleveland (*ante*). *Ref.* O.M.

4212. ——. In quartz. Por. 116, Par. of Cleveland, about 35 chains S.S.W. of Cleveland (*ante*). *Ref.* O.M.

4213. ——. In quartz reef. Guest's Sel., next to Gordon's, Mountain Camp, **Enoggera** Range, 6½ miles W. of Brisbane. *Co.* Stanley; *Dist.* Moreton.

4214. ——. In quartz. Jubilee Reef, Mountain Camp (*ante*). *Ref.* G.S.Q. Pub. 143, p. 9 (1899).

4215. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz reef. *Loc.* Perseverance Mine, Mountain Camp (*ante*). *Ref.* G.S.Q. Pub. 143, p. 9 (1899), and G.S.M.

4216. ——. *Assoc.with* Silver and Iron Pyrites, in quartz reef. *Loc.* Bethania, 21 miles (by rail) S.E. of Brisbane (South Coast line). *Co.* Stanley (should be Ward); *Dist.* Moreton. *Assay:* Gold = 9 dwt. 19 gr., Silver = 3 dwt. per ton. *Ref.* A.R., p. 51 (1906).

4217. ——. *Assoc.with* Copper Pyrites, Garnet, and Mispickel, in quartz and chlorite. *Loc.* P. Area, head of Ithaca Cr., Mt. Cootha, 5 miles W.byS. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Assays:* (1) Gold = 16 dwt. 8 gr., Silver = 4 dwt. 21 gr. per ton. (2) Gold = 2 oz. 19 gr., Silver = 4 dwt. 15 gr. per ton. *Ref.* G.S.Q. Pub. 98, p. 2 (1894).

4217A. ——. *Assoc.with* Silver, in quartz. *Loc.* 2 miles S. of **Kingston** Rail. Stn. (Beaudesert line), 19 miles S.E.byS. of Brisbane. *Co* Stanley (*ante*). *Ref.* A.R., p. 275 (1910).

4217B. ——. *Assoc.with* Silver and Hematito. *Loc.* Dundas, 16 miles N.N.W. of Ipswich. *Co.* Stanley (*ante*). *Ref.* A.R., p. 316 (1911).

4218. ——. In quartz. Mt. Taylor Gold Mine, Bennett's Sel. (411), 1 mile N. of Kingston Rail. Stn. (South Coast line), and 18 miles (by rail and road) S.E.byS. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 143, p. 18 (1899).

4219. ——. In quartz reef. Perseverance Mine, Nerum Cr., 6 miles S.W. of **Woodford,** 40 miles N.N.W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.M.

4219A.——. *Assoc.with* Iron Pyrites and Silver, in quartz and slate. *Loc.* Samson Cr., **Samford,** 8 miles W.N.W. of Enoggera Rail. Stn. *Co.* Stanley (*ante*). *Ref.* O.R.

4220. ——. In quartz reef. Broad's Sel., **Pine R.,** 14 miles (by rail) N.byW. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.M.

4221. ——. *Assoc.with* Manganese-dioxide, in quartzite. *Loc.* Callan's Banana Plantation, Por. 66, Par. of Bunza, ½-mile S. of Cash's Crossing. South Pine R., 11 miles N.N.W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* O.M.

4222. ——. In quartz reef. Pors. 192 and 193, Par. of Yeerongpilly, 1 mile W. of Yeerongpilly Rail. Stn., 5 miles (by rail and road) S. of Brisbane. *Co.* Stanley (*ante*). *Ref.* L.B. 3, p. 585 (1895), and A.R., pp. 309, 323 (1911).

4223. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz reef. *Loc.* Beaton's Sel. (68), nr. **Beenleigh** Rail. Stn. (South Coast line), 24 miles (by rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Assays:* From 2 dwt. to 13 dwt. of Gold per ton. *Ref.* G.S.Q. Pub. 51, p. 6 (1889).

4224. ——. *Assoc.with* Mispickel, in quartz reef. *Loc.* Buckley's Shaft, 8 miles S. of Beenleigh Rail. Stn. (South Coast line), 32 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 36, p. 2 (1887).

4225. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Fischer's Sel. (121), ¾-mile W. of Beenleigh (South Coast line), 24 miles (by rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Assays:* Gold = 5 dwt. 12 dwt. 10 gr. and 9 dwt. 12 gr. per ton. *Ref.* G.S.Q. Pub. 36, p. 1 (1887).

4225A.——. *Assoc.with* Iron Pyrites, in quartzite reef. *Loc.* Por. 239, Witty's Freehold, 1 mile W. of Ormean Rail. Stn. (South Coast line), 32 miles (by rail and road) S.W. of Brisbane. *Co.* Ward (*ante*). *Ref.* Q.G.M.J., vol. 11, p. 493.

4226. ——. *Assoc.with* Mispickel, in quartz reef. Sel. 239, Witty's Mountain (*ante*). *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 36, p. 1 (1887).

4226A.——. *Assoc.with* Silver, in quartz. *Loc.* Por. 158, Par. of Boyd, 4 miles S. of Beenleigh. *Co.* Ward (*ante*). *Ref.* (and *Assays*) Q.G.M.J., vol. 11, p. 418 (1910).

4226B.——. *Assoc.with* Mispickel and Ironstone, in quartz. *Loc.* 5 miles S. of Beenleigh Rail. Stn. (South Coast line), 29 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* A.R., p. 217 (1910).

4227. ——. *Assoc.with* Graphite, in siliceous schist. *Loc.* Carrington's Sel. (32), **Coomera R.,** 38 miles (by rail) S.E. of Brisbane (South Coast line). *Co.* Ward (*ante*). *Assay:* 7 to 10 dwt. of Gold per ton. *Ref.* G.S.Q. Pub. 51, p. 5 (1889).

4228. ——. *Assoc.with* Limonite, in quartz. *Loc.* Jamieson's Sel. (36), Wonga Wallen Cr., Coomera R. (*ante*). *Assay:* Gold = 7 dwt. per ton. *Ref.* G.S.Q. Pub. 51, p. 5 (1889).

4229. ——. In quartz reef. On eastern fall of steep ridge in Sel. (20), 6 miles W.S.W. of **Nerang** Rail. Stn. (South Coast line), 55 miles (by rail and road) S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton.

4230. ——. *Assoc.with* Silver. *Loc.* 4 miles S. of Nerang Rail. Stn., 49 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* A.R., p. 83 (1907).

4231. ——. *Assoc.with* Silver and Iron Pyrites, in quartz reef. *Loc.* Tunnel, nr. **Southport** (South Coast line), 50 miles (by rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* A.R., 150 (1908).

4231A.——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Banner Reef, **Barmundoo** (Tableland) Goldfield, 40 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* A.R., p. 214 (1910).

4232. ——. *Assoc.with* Iron Pyrites and Felspar, in quartz reef. *Loc.* Bunker's Mine, Barmundoo Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

4233. ——. In quartz. Cadell and Sutherland's Mine, Barmundoo Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 6 (1899).

4234. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende. *Loc.* Georgina Mine, Barmundoo Goldfield (*ante*). *Ref.* G.S.M.

4235. ——. *Assoc.with* Iron Pyrites, Mispickel, Galena, and Zinc Blende, in quartz and felspar. *Loc.* Griffith's Reef, W. side of Diggers' Cr., Barmundoo Goldfield (*ante*). *Yield:* 45 lb. of the pyritous stone went 6 dwt. of gold = 15 oz. of gold per ton. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

4236. ——. In quartz reef. East of Griffith's Reef, W. of Digger's Cr., Barmundoo Goldfield (*ante*). *Assay:* Gold = 1 oz. 16 dwt., Silver = 30 oz. per ton. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

4237. Gold. In quartz reef. Martin's Mine, Barmundoo Goldfield (*ante*). *Assay:* Gold = 6 to 7 oz. per ton. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

4238. ——. *Assoc.with* Iron Pyrites. *Loc.* Mountain Rise Mine, Barmundoo Goldfield (*ante*). *Ref.* G.S.M.

4239. ——. In quartz reef. Barmundoo Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

4240. ——. In quartz. Smith's Reef, Barmundoo Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

4241. ——. In quartz. Alexia Mine, Crow's Cr., Barmundoo Run, 35 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Yield:* Gold = 3 oz. per ton. *Ref.* G.S.Q. Pub. 58, p. 5 (1890).

4242. ——. *Assoc.with* Iron Pyrites, Mispickel, and Zinc Blende, in quartz reef *Loc.* Good Hope Mine, Crow's Cr., Barmundoo Run (*ante*). *Assays:* Gold = 4 oz. 3 dwt. 7 gr., 1 oz. 8 dwt. 14 gr., and 1 oz. 8 dwt. 14 gr.; Silver = 6 oz. 15 dwt., 5 oz. 17 dwt. 14 gr., and 2 oz. 3 dwt. 6 gr. per ton. *Ref.* G.S.Q. Pub. 58, p. 5 (1890).

4243. ——. In quartz reef. Mabel Mine, Crow's Cr., Barmundoo Run (*ante*). *Ref.* G.S.Q. Pub. 58, p. 5 (1890).

4244. —— (traces). *Assoc.with* Silver, Ironstone, Wollastonite, Epidote, and Copper carbonate, in limestone, garnet rock, and granite. *Loc.* P.A. (49), Diglum Cr., Barmundoo Stn., 21 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 162, pp. 6, 9 (1901).

4245. ——. *Assoc.with* Silver, Azurite, Malachite, and Mispickel, in quartz, ironstone, and clay. *Loc.* P.A. (56), Diglum Cr., Barmundoo Stn. (*ante*). *Ref.* G.S.Q. Pub. 162, p. 9 (1901).

4246. ——. In quartz reef. Dream Extd. Gold Mine, Mt. Jacob, **Bompa Goldfield,** 44½ miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 125, p. 20 (1897).

4247. ——. In decomposed granite dyke. *Loc.* Mt. Agnes and Sleeping Beauty Claims, Jacob's Knob, Bompa Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 7 (1890).

4248. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Mt. Jacob Mine (Garden, Mt. Fairbrother and Stand-by reefs), Bompa Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 7 (1880).

4249. ——. *Assoc.with* Iron Pyrites, Mispickel, Copper Pyrites, and Zinc Blende, in quartz reef. *Loc.* Roger's Claim, Bompa Goldfield (*ante*). *Assay:* Gold = 16 dwt. 8 gr., Silver = 1 oz. 9 dwt. 9 gr. per ton. *Ref.* G.S.Q. Pub. 58, p. 7 (1890).

4250. ——. In quartz. Smart, Wills, and Roger's Reef, 3 miles W. of Mt. Jacob, 47 miles S.byE. of Gladstone, Bompa Goldfield. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 58, p. 7 (1890).

4251. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in quartz and calcite. *Loc.* Stand-by Reef, Bompa Goldfield (*ante*). *Assay:* Gold = 9 dwt. 19 gr., Silver = 1 oz. 15 dwt. per ton. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

4252. ——. *Assoc.with* Calcite, in a casing of calcareous clay. *Loc.* Alexandra Reef, Boyne Range, above New Zealand Gully, 5 miles S.E. of Calliope, 17 miles S.E. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 5 (1885).

4253. ——. *Assoc.with* Calcite, in quartz. *Loc.* Mitchell Reef, Boyne Range, New Zealand Gully (*ante*). *Ref.* G.S.Q. Pub. 21, p. 5 (1885).

4254. ——. *Assoc.with* Galena, in quartz reef. *Loc.* Federal Block G.M.L. (52), Eastern Boyne Goldfield, 26½ miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 150, p. 9 (1900).

4255. ——. In quartz reef. *Loc.* Golden Spur G.M. Lease (50), **Eastern Boyne Goldfield** (*ante*). *Ref.* G.S.Q. Pub. 150, p. 9 (1900).

4256. ——. In quartz reef. *Loc.* True Blue G.M. Lease (44), Eastern Boyne Goldfield (*ante*). *Ref.* G.S.Q. Pub. 150, p. 10 (1900), and G.S.M.

4257. ——. *Assoc.with* Iron Pyrites in chloritic quartz. *Loc.* Connemara Reef, **Calliope Goldfield,** 12 miles S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 21, p. 4 (1885), 58, p. 8 (1890).

4258. ——. *Assoc.with* Iron Pyrites, in chloritic quartz. *Loc.* John Bull Reef, Calliope Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 8 (1890).

4259. ——. In quartz reef. Sheep Station Hill, Calliope Goldfield (*ante*). *Ref.* G.S.M.

4259a. ——. In quartz. *Loc.* **Fig-tree Prov. Goldfield,** 36 miles S.W.byS. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* O.R.

4260. ——. *Assoc.with* Silver, Galena, Cerussite, Anglesite, Massicot, Minium, Hematite, and Limonite. *Loc.* Bompa Silver-Lead Mine, Glassford Cr., 2 miles W.byS. of Littlemere Rail. Stn.. (Boyne Valley line), 53 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 159, pp. 7, 8 (1901).

4261. ——. In quartz. Mt. Alice P.C. and Caledonia P.C., etc., Mines, **Maxwelton Goldfield,** 35½ miles S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* A.R.D.M., pp. 77, 78 (1892).

4262. ——. In quartz. Lady Griffith, United Rise, and other Lines of Reef, **Monal Goldfield,** 42½ miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* A.R.D.M., pp. 77, 78 (1892).

4263. ——. *Assoc.with* Copper carbonate, Garnet, Rock Crystal, and Calcite. *Loc.* Mt. Grim, 3½ miles W.S.W. of Mt. Alma Stn., 30 miles W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 24 (1904).

4263A. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, and Ironstone, in crystalline limestone, etc. *Loc.* Mt. Hector Copper Mine, E. side of Dawes Range, 60 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* Q.G.M.J., vol. 4, pp. 174-177 (1903).

4264. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, Galena, Zinc Blende, and Calcite, in quartz. *Loc.* Advance Reef, **Norton Goldfield,** 33 miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Assay:* Gold = 2 oz. 7 dwt. 9 gr., Silver = 24 oz. 8 dwt. 22 gr. per ton. *Ref.* G.S.Q. Pubs. 21, p. 6 (1885), 208, p. 11 (1907).

4264A. ——. *Assoc.with* Stibnite, in quartz. *Loc.* Advance Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 6 (1885).

4265. ——. *Assoc.with* Silver, Iron Pyrites, Zinc Blende, and Galena, in quartz and calcite. *Loc.* All Nations Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 21, p. 8 (1885), and 208, p. 13 (1907).

4266. ——. *Assoc.with* Iron Pyrites, Mispickel, Scorodite, and Copper Pyrites, in quartz. *Loc.* Bald Hills Reef, Norton Goldfield (*ante*). *Assays:* Gold = 19 dwt. and 1 oz. 4 dwt., and Silver = 7 oz. per ton; Copper = 1½ and 3 per cent. *Ref.* G.S.Q. Pub 208, pp. 13, 14 (1907).

4267. ——. *Assoc.with* Silver, Iron Pyrites, Galena, Zinc Blende, and Malachite, in quartz. *Loc.* Brigham Young (Tadman's Tapautohaunga), Norton Goldfield (*ante*). *Refs.* (and *Assays*) G.S.Q. Pub. 208, pp. 15, 16 (1907).

4268. ——. In calcite. Calcite Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 17 (1907).

4269. ——. *Assoc.with* Silver, Iron Pyrites, Copper Pyrites, Redruthite, Azurite, Malachite, Mispickel, Scorodite, and Zinc Blende, in quartz. *Loc.* Chandler's Reef, Norton Goldfield (*ante*). *Assay:* Gold = 3 oz. 3 dwt., Silver = 4 oz. 17 dwt. per ton. *Ref.* G.S.Q. Pub. 208, p. 18 (1907).

4270. ——. *Assoc.with* Silver, Iron Pyrites, Galena, Mispickel, and Zinc Blende, in quartz. *Loc.* Conran's Reef, Norton Goldfield (*ante*). *Assay:* Gold = 7 oz., Silver = 8 oz. per ton. *Ref.* G.S.Q. Pub. 58, p. 8 (1890), and G.S.M.

4271. .—— *Assoc.with* Silver, in quartz. *Loc.* Dent's Reef, Norton Goldfield (*ante*) *Ref.* G.S.Q. Pub. 208, p. 19 (1907).

4272. ——. In quartz and calcite. Emu Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 20 (1907).

4273. ——. *Assoc.with* Iron Pyrites, Galena, Zinc Blende, and Calcite, in quartz. *Loc.* Frampton United Mine, Norton Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

4274. ——. *Assoc.with* Iron Pyrites, Mispickel, Zinc Blende, and Galena, in quartz and calcite. *Loc.* Frampton's Reef, Norton Goldfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 208, p. 21 (1907).

4275. ——. *Assoc.with* Iron Pyrites, Galena, etc., in quartz reef. *Loc.* Friend's Mine, Norton Goldfield (*ante*). *Ref.* G.S.M.

4276. ——. *Assoc.with* Silver, Galena, Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Galena Reef, Norton Goldfield (*ante*). *Assay: See* No. 3048. *Ref.* (and *Assays*) G.S.Q. Pub. 208, pp. 22-24 (1907).

4277. ——. *Assoc.with* Silver, Iron Pyrites, Mispickel, Redruthite, Galena, and Zinc Blende. *Loc.* Goody's (Carmichael's) Reef, Norton Goldfield (*ante*). *Assay:* Gold = 19 dwt., Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 208, p. 26 (1907).

4278. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Han's Big Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 27 (1907).

4279. ——. *Assoc.with* Iron Pyrites, Zinc Blende, Galena, and Calcite, in quartz. *Loc.* Hickey's Reef, Norton Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

4280. Gold. *Assoc.with* Silver, Iron Pyrites, Mispickel, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Little Wonder Reef, Norton Goldfield (*ante*). *Assay:* Gold = 1 oz. 9 dwt. 19 gr., Silver = 3 oz. 16 dwt. 9 gr. per ton. *Ref.* G.S.Q. Pubs. 21, p. 7 (1885), and 208, p. 29 (1907).

4281. ——. *Assoc.with* Silver, in quartz reef. *Loc.* Marodian Main and Leader, Norton Goldfield (*ante*). *Assays:* "Marodian Main"—Gold = 1 oz. 6 dwt., Silver = 1 oz. 8 dwt. 19 gr. per ton. "Marodian Leader"—Gold = 5½ oz., Silver = 6½ oz. per ton. *Ref.* A.R., p. 50 (1906).

4282. ——. *Assoc.with* Silver, Iron Pyrites, Zinc Blende, in quartz and calcite. *Loc.* Marodian Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 32 (1907).

4283. ——. In gossany quartz. Martin's Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 7 (1885).

4284. ——. *Assoc.with* Iron Pyrites, etc., in quartz. *Loc.* Mundic Lode, Norton Goldfield (*ante*). *Ref.* G.S.M.

4285. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Never Never Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 7 (1885).

4286. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz. *Loc.* New Constitution Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 33 (1907).

4287. ——. *Assoc.with* Iron Pyrites, Limonite, Mispickel, and Zinc Blende, in quartz. *Loc.* Paddock Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 34 (1907).

4288. ——. *Assoc.with* Iron Pyrites and Mispickel, in calcite. *Loc.* Sailor Boy Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 35 (1907).

4289. ——. In quartz. Scorpion Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 35 (1907).

4290. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Smart's Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 36 (1907).

4291. ——. In quartz. Spotted Gum Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 36 (1907).

4292. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, and Zinc Blende, in quartz. *Loc.* Sulphide Reef, Norton Goldfield (*ante*). *Assay:* Gold = 1 oz. 8 dwt., Silver = 2 oz. 7 dwt. 4 gr. per ton. *Ref.* G.S.Q. Pub. 208, p. 38 (1907).

4293. ——. In quartz. Welcome Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 39 (1907).

4294. ——. *Assoc.with* Silver, Iron Pyrites, Mispickel, Galena, and Zinc Blende, in quartz and calcite. *Loc.* Who'd-Ha'-Thought-It Reef, Norton Goldfield (*ante*). *Assay:* Gold = 5 oz. 10 dwt. 9 gr., Silver = 6 oz. 9 dwt. 14 gr. per ton. *Ref.* G.S.Q. Pubs 21, p. 6 (1885), 208, p. 39 (1907).

4295. ——. *Assoc.with* Iron Pyrites and Mispickel, in quartz reefs. *Loc.* Granite Ridges, Wattle and Cattle Crs., Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 7 (1885).

4295A.——. In quartz. **Uncle Sam Prov. Goldfield,** 24¼ miles S.byE. of Gladstone. *Co.* Clinton (*ante*).

4295B.——. *Assoc.with* Silver and Hematite, in quartz. *Loc.* Found-at-Last Gold Mine, One-tree Hill, 1 mile S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* (and *Assays*) Q.G.M.J., vol. 3, pp. 606, 607 (1902).

4296. ——. In ferruginous quartz. Duke of Brittany Reef, **Raglan Goldfield,** 34 miles (by rail) W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

4297. ——. In casing of Kaolin, in quartz. Port Alma Reef, Raglan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

4297A.——. *Assoc.with* Silver and Mispickel, in quartz. *Loc.* Archer Reef, **Targinnie** Goldfield, 4 miles N.N.W. of Yarwun Rail. Stn. (North Coast line). *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* (and *Assays*) Q.G.M.J., vol. 2, pp. 529, 530 (1901).

4297B.——. *Assoc.with* Silver, in quartz. *Loc.* Targinnie Reefs, Targinnie Goldfield (*ante*). *Ref.* (and *Assays*) Q.G.M.J., vol. 2, pp. 529, 530 (1901).

4298. ——. In quartz. Allenstown, Alliance, Central Queensland, Golden Gate, Mt. Morrissey, Normanby, Recovery, and Starlight Mines, **Ulam Goldfield,** 3 miles S. of Toonda Rail. Stn. (N. Coast line), 44 miles (by rail and road) W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 99, pp. 7-12 (1894).

4299. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Central Queensland 1 N.E., Last Chance, Mystery, and Nil Desperandum Mines, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, pp. 5-9 (1894).

4300. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Capricornian Claim, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 6 (1894).

4301. ——. *Assoc.with* Ironstone, in felsite dyke. *Loc.* Jack Mine, Ulam Goldfield (*ante*). *Assays:* (1) Gold = 1 oz. 2 dwt. 20 gr. (2) 1 dwt. 13 gr. per ton. *Ref.* G.S.Q. Pub. 99, p. 7 (1894).

4302. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Just-in-Time Claim, Ulam Goldfield (*ante*). *Assay:* Gold = 1 oz. 9 dwt. 9 gr. per ton. *Ref.* G.S.Q. Pub. 99, p. 11 (1894).

4303. ——. *Assoc.with* Iron Pyrites, Galena, and Copper carbonate, in quartz. *Loc.* Lamona Claim, Busby's Gully, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 9 (1894).

4304. ——. *Assoc.with* Iron Pyrites and Limonite, in quartz. *Loc.* New Silksworth Claim, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 11 (1894).

4305. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Queenslander P.C., Queensland Cr., Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p 4 (1894).

4306. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc* Seaview Mine, Claim, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 11 (1894).

4307. ——. *Assoc.with* Iron Pyrites and Ironstone, in quartz. *Loc.* St. Joseph United Mine, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 10 (1894).

4308. ——. *Assoc.with* Iron Pyrites and Ironstone, in quartz. *Loc.* True Blue Reef, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 3 (1894).

4309. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Victory Claim, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 10 (1894).

4310. ——. *Assoc.with* Copper, Bull Cr., Par. of Ulogie, 36 miles S.E. of Rockhampton. *Co.* Deas Thompson; *Dist.* Port Curtis.

4311. ——. In quartz reef. Mt. Archer, 4 miles N.N.W. of Yarwun Rail. Stn. (North Coast line). *Co.* Deas Thompson (*ante*). *Ref.* G.S.M.

4312. ——. *Assoc.with* Limonite and Green Chrome silicate, in quartz. *Loc.* Federation Amalgamated Mine, **Oaks View**, 4 miles N. of Oaks Stn., 45 miles (by road) N.N.W. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 205, p. 18 (1906).

4313. ——. *Assoc.with* Magnesite, Chalcedony, and Serpentine, in gossan. *Loc.* Oaks View Consolidated Mines, Oaks View (*ante*). *Ref.* G.S.Q. Pub. 205, pp. 16, 17 (1906).

4314. ——. *Assoc.with* Serpentine and Quartz, in gossan. *Loc.* Oaks View Gold Mine, Oaks View (*ante*). *Ref.* G.S.Q. Pub. 205, pp. 7-16 (1906).

4315. ——. In quartz. Young Britannia Mine, N. of Lake Learmonth, **Canoona Goldfield**, 35 miles N.byW. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Ref.* A.R.D.M., p. 93 (1897).

4315A. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Halliday's and King's No. 8 and May's Reefs, in Britannia Mine, Canoona Goldfield (*ante*). *Ref.* O.R. (1910).

4315B. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* King's Reefs (1 and 2), in Young Britannia Mine (*ante*). *Ref.* A.R., p. 269 (1910).

4315C. ——. *Assoc.with* Silver, Galena, Zinc Blende, and Copper Pyrites, in quartz reef in diorite country. *Loc.* Britannia Mine (*ante*). *Assay:* 6 oz. gold and 4 oz. silver per ton. *Ref.* B.D.

4316. ——. In quartz reef. **Princhester**, 44 miles N.W. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Ref.* G.S.M.

4317. ——. *Assoc.with* Silver and Copper Pyrites. *Loc.* About ¼-mile from Baree Rail. Stn., 1 mile N. of Mt. Morgan Rail. Stn., 23 miles (by rail) S.S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Assay: See* No. 2296. *Ref.* A.R., p. 47 (1906).

4318. ——. In quartz. Broadmount, mouth of Fitzroy R., 24 miles (by rail) E.byS. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.M.

4319. ——. *Assoc.with* Galena, Zinc Blende, and Dolomite, in quartz and serpentine. *Loc.* Annie Gold Mine, **Cawarral Goldfield**, 23 miles (by rail) N.N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 125, p. 28 (1897), and G.S.M.

4320. ——. In chloritic slate. Black Jack Mine, Cawarral Goldfield (*ante*). *Ref.* Q.M.

4321. ——. *Assoc.with* Iron Pyrites, in serpentine. *Loc.* Endeavour Mine, Cawarral Goldfield (*ante*). *Ref.* Q.M.

4322. ——. *Assoc.with* Iron Pyrites and Chlorite, in quartz. *Loc.* Helena Reef, Cawarral Goldfield (*ante*). *Ref.* Q.M.

4323. Gold. *Assoc.with* Silver, Copper Pyrites, and Iron Pyrites, with traces of Zinc Blende, Galena, Azurite, Malachite, Earthy Hematite, and Red Jasper, in massive lode in quartzite, ironstone, and shale. *Loc.* Great Fitzroy Copper Mine, Mt. Chalmers, 4 miles N.byW. of New Zealand Gully Rail. Stn. (Yeppoon line), 19 miles (by rail and road) N.E. of Rockhampton, Cawarral Goldfield. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* (and *Assays*) G.S.Q. Pub. 216 (1907).

4324. ——. In quartz. Lady Margaret Mine, Cawarral Goldfield, 23 miles (by rail) N.N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* A.R.D.M., p. 107 (1908).

4325. ——. In quartz. Mt. Dalzell G.M. Co.'s Mine, Cawarral Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 28 (1897).

4326. ——. *Assoc.with* Iron Pyrites, Calcite, and Tourmaline. *Loc.* Union Gold Mine, Cawarral Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 67 (1887).

4327. ——. In quartz. Kepple Bay View Mine, New Zealand Gully, about 2½ miles N.W. of New Zealand Gully Rail. Stn. (Emu Park line), Cawarral Goldfield. *Co.* Livingstone (*ante*). *Ref.* G.S.M.

4328. ——. *Assoc.with* Cerargyrite (Horn Silver). *Loc.* Last Chance Reef, New Zealand Gully (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 40 (1887).

4329. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* North Star Mine, New Zealand Gully (*ante*). *Assay:* Gold = 8 oz. per ton. *Ref.* G.S.M.

4330. ——. *Assoc.with* Silver, in quartz. *Loc.* Coolcoora, 14 miles (by rail) E.N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* A.R., p. 47 (1906).

4331. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Pyrrhotite, in quartz reef. *Loc.* Hector Mine, on Crocodile Cr. Rd., 6 miles S. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 125, p. 27 (1897), and G.S.M.

4332. ——. *Assoc.with* Native Copper and other copper ores, in quartz reef. *Loc.* Alliance Mine, **Morinish Goldfield,** 25 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* Q.M.

4333. ——. *Assoc.with* Redruthite and Tenorite, in quartz. *Loc.* Alliance Mine, Morinish Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, pp. 43-57, and G.S.M.

4334. ——. *Assoc.with* Copper Pyrites, in quartz reef *Loc.* Morinish Goldfield (*ante*). *Ref.* Q.M.

4335. ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Mary Flornece Reef, Blacfellow's Gully, Morinish Goldfield (*ante*). *Ref.* G.S.M.

4336. ——. *Assoc.with* Iron Pyrites and Galena, in quartz reef. *Loc.* Welcome Mine, Morinish Goldfield (*ante*). *Ref.* Q.M. and P.R.S.Q., vol. 4, p. 47 (1887).

4337. ——. *Assoc.with* Galena and Ironstone, in quartz. *Loc.* Miner's Dream Mine, Bob's Cr., 4 miles E.N.E. of Bouldercombe, Mt. Morgan (Crocodile) Goldfield. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 132, p 16 (1898).

4338. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* **Mt. Usher** Mine, Gavial Cr., 6 miles N.E. of Mt. Morgan (Crocodile Cr.) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 15 (1898), and G.S.M.

4338A. ——. *Assoc.with* Telluride of Gold and Silver, Iron Pyrites, and Zinc Blende, in calcite and quartz. Anglo-Saxon Mine, Mt. Usher, Gavial Cr. (*ante*). *Ref.* O.R.

4339. ——. *Assoc.with* Chromite and Chrome Ochre, in serpentine. *Loc.* **Mt. Wheeler,** 3 miles N. of Cawarral Rail. Stn. (Yeppoon line), 26 miles (by rail and road) N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 69 (1887).

4340. ——. *Assoc.with* Limonite. *Loc.* Dawn of Hope Mine, **Ridgelands Goldfield,** 20 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.M.

4340A. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Nil Desperandum Mine, Ridgelands Goldfield (*ante*). *Ref.* G.S.M.

4341. ——. In quartz. *Loc.* Morning Star Mine, Ridgelands Goldfield (*ante*). *Ref.* A.R.D.M., p. 118 (1900).

4342. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Native Cat Extd., **Stanwell Goldfield,** 16 miles (by rail) S.W.byW. of Rockhampton (Central line). *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.M., A.R.D.M., p. 119 (1900).

4343. ——. In quartz. *Loc.* Stony Cr., Stanwell Goldfield (*ante*). *Ref.* G.S.Q. Pub. 131 (1898).

4344. ——. In quartz. Table Mt., 4½ miles E.byS. of Stanwell Rail. Stn., 20 miles (by rail and road) S. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131 (1898).

4345. ——. *Assoc.with* Limonite and Manganese-dioxide, in quartz. *Loc.* Taranganba Gold Mine, 1½ mile S. of Yeppoon Rail. Stn., 36½ miles (by rail and road) N.E.byN. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 50, p. 2 (1889).

4346. ——. *Assoc.with* Galena and Cerussite, in quartz. *Loc.* Magpie Lode, Carmilla Mine, Connor's Range, nr. Broadsound, 30 miles N. of **St. Lawrence.** *Co.* Murchison; *Dist.* Port Curtis. *Assay:* Gold = 1 dwt. 15 gr., and Silver = 9 oz. 5 dwt. 5 gr. per ton. *Ref.* G.S.Q. Pub. 141, p. 5 (1898).

4347. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Mouth of Inlet, near Green Hill, 40 miles S. of Mackay. *Co.* Murchison (*ante*). *Assay:* Gold = 4 oz. 18 dwt. per ton. *Ref.* G.S.Q. Pub. 39, p. 10 (1887).

4348. ——. *Assoc.with* Copper. *Loc.* E. side of Green Hill, 40 miles S. of Mackay. *Co.* Murchison (*ante*). *Assay:* Copper = 12 per cent., Gold = 5 dwt. per ton. *Ref.* G.S.Q. Pub. 39, p. 10 (1887).

4349. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Langdale Hill, nr. Tooloombah Stn., 26 miles S. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 84, p. 9 (1892).

4350. ——. In quartz reef. *Loc.* Alliance Mine, **Rosewood Goldfield,** 32 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis (*ante*). *Ref.* G.S.M.

4351. ——. *Assoc.with* Iron Pyrites, in quartz and chlorite. *Loc.* Caledonia Reef, Rosewood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 49, p. 7 (1889).

4352. ——. In quartz reef. Golden Bar Reef, Rosewood Goldfield (*ante*). *Ref.* Q.M.

4353. ——. *Assoc.with* Copper Pyrites and Copper Oxides, in quartz. *Loc.* Gt. Northern Copper Mine, Rosewood Goldfield (*ante*). *Ref.* G.S.M.

4354. ——. *Assoc.with* Calcite and Chlorite. *Loc.* Rosewood Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 73 (1887), and G.S.M.

4355. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Westwood Reef, 5½ miles S.E. of Westwood Rail. Stn., 36½ miles (by rail and road) S.W. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Assays:* Gold (1) = 9 dwt. 2 gr., (2) = 2 dwt. 14 gr., (3) = 2 dwt. 14 gr. per ton. *Ref.* G.S.Q. Pub. 103, p. 30 (1895).

4356. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Mt. Hope or Homeward Bound Reef, **Cania Goldfield,** 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis.

4357. ——. *Assoc.with* Copper Pyrites, Molybdenite, and Calcite, in quartz. *Loc.* Mt. Rose Reef, Cania Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 9 (1885), and G.S.M.

4358. ——. *Assoc.with* Mispickel, in quartz. *Loc.* Wild Horse Reef, Cania Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 9 (1885).

4359. ——. In quartz reef. Antonio's Mountain, **Mt. Morgan (Crocodile Cr.) Goldfield,** 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* Q.M.

4360. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz reef. *Loc.* Champion Lease (190), 1 mile N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 132, p. 12 (1890).

4361. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz. *Loc.* Clanricarde Mine, 4 miles S.S.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 103, p. 30 (1895).

4362. ——. *Assoc.with* Copper Pyrites, in quartz reef. *Loc.* Crow's Nest Mine, 3 miles W.N.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 9 (1898), and G.S.M.

4363. ——. *Assoc.with* Limonite, in quartz reef in granite. *Loc.* E. of Glen Dee, Dee R., 5 miles E.N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 161, p. 15 (1901).

4364. ——. In decomposed granite. Deep Shaft, Greenvale, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.M.

4365. ——. *Assoc.with* Iron Pyrites, in quartzite. *Loc.* Gt. North Lode, 3½ miles N.N.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 103, p. 29 (1895).

4366. ——. *Assoc.with* Iron Pyrites, Limonite, and Calcite, in euritic granite. *Loc.* Hidden Treasure Mine, Mundic Cr., 1 mile W.S.W. of Mt. Morgan Goldfield Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 132, p. 11 (1893), and 161, pp. 9-12 (1901).

4367. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Hit or Miss Mine, Mt. Morgan Goldfield (*ante*). *Ref.* Q.M.

4368. Gold. *Assoc.with* Iron Pyrites, in gossan, quartzite, and conglomerate. *Loc.* Light of Day Gold Mines, Mt. Gilmore, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 132, p. 11 (1898), and 161, pp. 5-8 (1901).

4369. ——. *Assoc.with* Iron Pyrites, in quartzite lode. *Loc.* Morganite Mine, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 161, p. 12 (1901).

4369A. ——. *Assoc.with* Hematite and Limonite, in lodes. *Loc.* Mt. Alexander Mines, 8 miles E.S.E. of Mt. Morgan Rail. Stn., and 32 miles (by rail and road) from Rockhampton, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 17 (1898).

4370. ——. *Assoc.with* Silver, Copper Pyrites, Iron Pyrites, Hematite, Magnetite, Limonite, Göthite, Pyrolusite, and Satin-spar, in vesicular quartz, quartzite, and kaolin. *Loc.* Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 17 (1884), 132, p. 8 (1898), and G.S.M.

4371. ——. *Assoc.with* Iron Pyrites, Copper carbonate, and Ironstone, in serpentine and quartzite. *Loc.* Mt. Morgan North Mine, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 8 (1898).

4372. ——. In conglomerate. Central Mine, Mt. Victoria, 3 miles W.S.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 12 (1892), and 103, p. 28 (1895).

4373. ——. *Assoc.with* Hematite, in quartz. *Loc.* Manukan Mine, Mount Victoria (*ante*). *Ref.* G.S.Q. Pub. 87, p. 11 (1892).

4374. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Mundic Reef, near Mt. Morgan Rail. Stn., Mt. Morgan Goldfield. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.M.

4375. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Peut's Reef, S. of Champion Gully, 1 mile N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 12 (1898).

4376. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Mispickel, and Zinc Blende, in quartz reef. *Loc.* Queen of the Valley Mine, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 13 (1898), G.S.M., and Q.M.

4377. ——. *Assoc.with* Iron Pyrites, in quartzite. *Loc.* Rockhampton Prospecting Co.'s Area, 1¼ miles W.N.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 10 (1898).

4378. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz and calcite. *Loc.* Roxburgh Mine, 6 miles N.E.byE. of Mt. Morgan Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 132, p. 14 (1898).

4379. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* St. Gothard Mine, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 16 (1898).

4380. ——. In quartz reef. Strover's Mine, Mt. Morgan Goldfield (*ante*). *Ref.* Q.M.

4381. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, in quartz and calcite. *Loc.* Struck Oil Lease (186), 5 miles E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*. *Assay:* Gold = 156 oz. 13 dwt. 9 gr., and Silver = 17 oz. 2 dwt. 7 gr. per ton. *Ref.* G.S.Q. Pubs. 103, p. 29 (1895), and 132, p. 14 (1898), and G.S.M.

4382. ——. *Assoc.with* Iron Pyrites, Tourmaline, and Calcite, in quartz reef and in aplite. *Loc.* Union G.M. Co.'s Lease, Mt. Morgan Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 40 (1887).

4383. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz. *Loc.* Welcome Mine, Champion Gully, 1¼ mile N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 13 (1898).

4384. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Windsor Mine, Mt. Morgan Goldfield (*ante*). *Ref.* Q.M.

4385. ——. *Assoc.with* Chalcedony, in cement. *Loc.* **Moondilla Goldfield,** 10 miles S. of Adavale, 90 miles (by rail and road) W.N.W. of Charleville. *Co.* McKinlay; *Dist.* **Warrego.** *Ref.* G.S.Q. Pub. 78, p. 1 (1891).

4385A. ——. Bingera, 3 miles S.S.E. of Birthamba Rail. Stn. (Mt. Perry line). *Co.* Cook; *Dist.* **Wide Bay.** Gold rush took place here in 1852, but was declared a "duffer."

4386. ——. *Assoc.with* Silver and Iron Pyrites, in quartz. *Loc.* Black Snake Reef, **Black Snake Goldfield,** 10 miles S. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

4387. ——. *Assoc.with* Silver, in quartz. *Loc.* Homeward Bound Reef, Black Snake Goldfield (*ante*). *Ref.* G.S.M.

4388. ——. *Assoc.with* Silver and Copper Ores. *Loc.* Kilkivan Gold Mine, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 36 (1897).

4389. ——. *Assoc.with* Silver, Copper Pyrites, Redruthite, Pyrrhotite, Mispickel, Galena, and Stibnite. *Loc.* Mariner's Reef, Black Snake Goldfield (*ante*). *Analysis and Assays of Ore: See* No. 2318. *Ref.* G.S.Q. Pub. 28, p. 6 (1886).

4390. —— *Assoc.with* Iron Pyrites. *Loc.* Queensland Freeholds Co.'s Mine, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 53 (1897).

4391. ——. *Assoc.with* Silver, Galena, Native Copper, and Copper carbonate, in lode. *Loc.* Mt. Terrible Lode, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

4392. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Mispickel, in quartz. *Loc.* Rose, Shamrock, and Thistle Mine, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

4392A. ——. *Assoc.with* Copper carbonate, Hematite, and Magnetite, in quartz. *Loc.* Rose, Shamrock, and Thistle Mine, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

4393. ——. *Assoc.with* Silver, Iron Pyrites, and Tenorite, in quartz reef. *Loc.* Stony Ridge, Black Snake Goldfield (*ante*). *Yield:* Gold = 1 oz. 6 dwt. 16 gr., Silver = 87 oz. per ton.

4394. ——. *Assoc.with* Ironstone, in quartz and calcite. *Loc.* Tableland Reef, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

4395. ——. *Assoc.with* Silver, Iron Pyrites, Copper Pyrites, Galena, Mispickel, Zinc Blende, and Schorl. *Loc.* Victoria Reef, Black Snake Goldfield (*ante*). *Ref.* G.S.M.

4396. ——. In quartz. Gt. Tasman Reef, Glastonbury and Widgee Creeks, **Glastonbury Goldfield,** 7 miles W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.M.

4397. ——. Crystallised in an aggregation of cubes. *Loc.* Mt. Doran Mine, Glastonbury Goldfield (*ante*). *Ref.* B.D.

4398. ——. In gossan. Royal David Reef, 1 mile from Dryfesdale, Glastonbury Goldfield (*ante*). *Ref.* G.S.M.

4399. ——. In quartz reef. "Without-a-Friend" Mine, Glastonbury Goldfield (*ante*). *Ref.* G.S.M.

4400. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Empress Reef, **Jimma (Yabba) Goldfield,** 35 miles S. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 169, p. 15 (1901).

4401. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Redruthite, Cuprite, Malachite, Bismuthinite, Magnetite, and Limonite, in lode. *Loc.* Kabonga Mine, **Kilkivan Goldfield,** 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 125, p. 36 (1897), and G.S.M.

4402. ——. *Assoc.with* Manganese-dioxide and Native Arsenic, in porphyry. *Loc.* Long Tunnel P.C., Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 3 (1886), and G.S.M.

4403. ——. *Assoc.with* Calcite, in white porphyry. *Loc* Long Tunnel 2 North, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 3 (1886).

4403A. ——. *Assoc.with* Iron Pyrites, in quartz and gossan. *Loc.* New Year's Extd. Claim, Kilkivan Goldfield (*ante*). *Ref.* A.R., p. 202 (1909).

4404. ——. *Assoc.with* Azurite and Malachite, in quartz leader. *Loc.* New Year's Reef, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 2 (1886).

4405. ——. *Assoc.with* Calcite, in quartz. *Loc.* Perseverance Reef, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 3 (1886).

4406. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende, in quartz reef. *Loc.* Rise and Shine Mine, Kilkivan Goldfield (*ante*). *Ref.* G.S.M.

4406A. ——. In quartz. Gold Top Prov. Goldfield, 4 miles N.W.byW. of Kilkivan Rail. Stn., Kilkivan Goldfield (*ante*).

4406B. ——. *Assoc.with* Iron Pyrites and Ironstone, in quartz lode. *Loc.* P.A. 815, 7 miles (by road) W. of Kilkivan. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* A.R., p. 235 (1910).

4407. ——. In quartz. Colo Gold Mine, **Marodian Goldfield,** 12 miles N.byE. of Kilkivan Rail. Stn., 60 miles (by rail and road) W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 10 (1902).

4408. ——. In calcite. Three Bells Mine, Running Cr., Marodian Goldfield (*ante*). *Assay:* Gold = 7 dwt. per ton. *Ref.* G.S.Q. Pubs. 59, p. 8 (1890), and 179, p. 10 (1902).

4409. Gold. *Assoc.with* Iron Pyrites, Copperas, Tenorite, Galena, Calamine, and Zinc Blende. *Loc.* Beer and Dawson's Lease, **Yorkey's Goldfield,** 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 179, p. 8 (1902).

4410. ——. *Assoc.with* Iron Pyrites, Hematite, Graphite, and Calcite, in lode in diorite. *Loc.* Campbell's Reef, Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 8 (1902), and G.S.M.

4411. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Hematite, and Zinc Blende, in quartz. *Loc.* Ortt's Mine, Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 8 (1902).

4412. ——. *Assoc.with* Stibnite, Iron Pyrites, and Galena, in quartz reef. *Loc.* Triad Lease, Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 7 (1902).

4413. ——. *Assoc.with* Calcite and Magnesite, in quartz. *Loc.* Waratah Lease, Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 7 (1902).

4414. ——. *Assoc.with* Iron Pyrites, Stibnite, and Cervantite. *Loc.* Yorkey's Surprise and Zealandia G.M. Leases, Surprise-Zealandia Reefs, Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 5 (1902).

4415. ——. *Assoc.with* Silver and Copper Pyrites. *Loc.* Blue Bell P.A., 32 miles from Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* B.D.

4416. ——. In quartz. Sel. (1486), nr. Devil's Mountain, Par. of Brooyar, 17 miles N.W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.M.

4416A. ——. *Assoc.with* Stibnite. *Loc.* Mt. Rose, Glenbar Stn., 20 miles W. of **Tiaro** Rail. Stn. (North Coast line). *Co.* Lennox (*ante*). *Ref.* L.C.B.

4417. ——. *Assoc.with* Iron Pyrites, Copper carbonate, Mispickel, Limonite, and Zinc Blende, in quartz, calcite, and gossan veins. *Loc.* Mt. Ruby, ½-mile W.N.W. of Glenbar Hd. Stn., 20½ miles W. of Tiaro Rail. Stn. (North Coast line) (*ante*). *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

4417A. ——. *Assoc.with* Silver in quartz. *Loc.* Chinaman's Cr., trib. of Mary R., nr. Mt. Ubi, W. of **Blackall Range,** 15 miles W.byS. of Palmwoods Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub, 196 (1905), and A.R., pp. 83, 95, 96 (1907).

4418. ——. In quartz veins. Walli and Chinaman's Creeks, near Mt. Ubi, W. of Blackall Range (*ante*). *Ref.* G.S.Q. Pub. 196, pp. 4, 5 (1905).

4419. ——. Por. (1187), Par. of Brooyar, nr. Wide Bay Cr., 15 miles N.W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* O.M.

4420. ——. Imbil, Yabba River, 8 miles from Kandanga, 15 miles S. of Gympie. *Co.* Lennox (*ante*). *Ref.* O.M.

4421. ——. In quartz. Alliance 1 S. Lease (625), Dodd's Reef, and Reef on south side, **Gympie Goldfield,** 106 miles (by rail) N.byW. of Brisbane (North Coast line). *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 52, p. 32 (1889).

4422. ——. In quartz and black shale. *Loc.* Caledonia United Lease (312), Alma, Lady Mary, and Caledonia Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, pp. 24, 34 (1889).

4423. ——. *Assoc.with* Mispickel, in quartz reef. *Loc.* Columbia Consolidated Mine, Gympie Goldfield (*ante*). *Ref.* G.S.M.

4424. ——. In quartz. Columbia and Smithfield Lease (672), Columbia Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 26 (1889), and 76, pp. 4, 5 (1891).

4425. ——. In quartz. Crown and Phœnix Lease (361), Reef 156 feet from shaft, and No. 2 Reef (Western Reef of Phœnix 4 N.), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 34 (1889).

4426. ——. In quartz. Crown and Phœnix Extd. Mine, New Zealand and Crown Reef, and Phœnix Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 76, p. 6 (1891).

4427. ——. Ellen Harkins Lease (568), Ellen Harkins Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52 (1889), and 100 (1895).

4428. ——. In quartz. Ellen Harkins 1 N. Lease (634), Ellen Harkins Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52 (1889), and 100 (1895).

4429. ——. In quartz. Ellen Harkins 1 South Lease, Ellen Harkins Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52 (1889), and 100 (1895).

4430. ——. In quartz. Ellen Harkins S. and Wilmot Lease (669), Reef at 518 feet depth, probably the Monkland and Reef cut at 618 feet depth, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 22 (1889).

4431. ——. In quartz. Glanmire P.C. Lease (598), Glanmire, and No. 1 and No. 2 Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 18 (1889)

4432. ——. In quartz. Glanmire N. Lease (579), Nos. 1 to 9 Reefs, Gt. Eastern and Monkland Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 20 (1889), and 76, p. 3 (1891).

4433. ——. In quartz. Glanmire 1 N. Lease (602), Gt. Eastern, Orient, and Diorite Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 76, p. 3 (1891), and 100, pp. 8, 9 (1895).

4434. ——. In quartz. Glanmire 1 N. Lease (602), 7 nearly parallel Reefs, known as Nos. 1 and 2 (probably the Glanmire Reef), 3, 4, 5, 6, 7, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 19 (1889).

4435. ——. In quartz. Glanmire 3 and 4 N. Lease (331), two main Reefs called 1 and 2, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 20 (1889), and 76, pp. 3, 4 (1891).

4436. ——. In quartz. Glanmire 5 N. Lease (522) Reef, probably a continuation of one seen in crosscut of S. United, between the Smithfield and Columbia Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 21 (1889).

4437. ——. In quartz. Glanmire and Monkland S. Lease (833), Inglewood, Monkland, "Old Eastern," Gt. Eastern Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 15 (1889), and 100, p. 7 (1895).

4438. ——. *Assoc.with* Iron Pyrites, in carbonaceous shale. *Loc.* Golden Crown Lease (613), Phœnix, Crown, and March Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, pp. 30, 31 (1889).

4439. ——. In quartz. Gt. Eastern Lease (588), "Old Eastern" and Gt. Eastern Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 17 (1889).

4440. ——. In quartz leaders. Gt. Eastern Extd. Mine, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 76, p. 3 (1891).

4441. ——. In quartz. Gt. Eastern 1 N. Lease (872), Orient Reef, and two reefs and leaders, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 21 (1889), 76, p. 3 (1891), and 100, p. 9 (1895).

4442. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Gt. Eastern 2 Lease (779), Inglewood Reef, and No. 3 Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 76, p. 2 (1891), and 100, pp. 5, 6 (1895).

4443. ——. In quartz. Gt. Eastern 2 N. Lease (724), Orient and Diorite Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 76, pp. 3, 4 (1891), and 100, pp. 8, 9 (1895).

4444. ——. In quartz. Gt. Eastern 1 S. Lease, Orient Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 76, p. 3 (1891).

4445. ——. *Alloyed with* Silver, in Telluride Ore. *Loc.* Gt. Eastern 2 S. Mine, Glanmire and Monkland S. No. 4 Reef, Gympie Goldfield (*ante*). *Assay:* Gold = 130 oz. 16 dwt. per ton; Silver = 3339 oz. 3 dwt. 8 gr. per ton; Tellurium = 5·26 per cent. *Ref.* G.S.Q. Pubs. 76, p. 3 (1891), 196, p. 25 (1905), and G.S.M.

4446. ——. In quartz. Gt. Eastern and Orient Lease (821), Orient Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 9 (1894).

4447. ——. In quartz. Gt. Monkland Lease (629), Glanmire and Monkland Reef, and reef containing small veinlets of calcite, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 18 (1889), and 100, p. 8 (1895).

4448. ——. In quartz. Gt. New Zealand Lease (815), Western and Annie Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 76, p. 6 (1891), and 100, pp. 15, 16 (1895).

4449. ——. In quartz. Gympie Golden Crown Mine, Peter and Paul and All Serene Reefs, Two Mile, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 76, p. 7 (1891).

4450. ——. In quartz. Hilton Extended Lease (638), Hilton and Hamburg lines of reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 31 (1889).

4451. ——. In quartz. Inglewood United Lease (814), Inglewood Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 8 (1895).

4452. ——. In quartz. Lady Mary N. Lease (505), Lady Mary Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4453. ——. In quartz. Lady Mary 2 N. Lease (411), Lady Mary, Alma, Caledonia (or Middle) Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 35 (1889).

4454. ——. In quartz. Lady Mary 3 and 4 N. Lease (228), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 35 (1889).

4455. ——. In quartz. Lady Mary 5 N Lease (653), Lady Mary Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 32, p. 9 (1887), and 52, p. 35 (1889).

4456. ——. In quartz. Lady Mary 7 S. Lease (670), Alma, Lady Mary, and Caledonia Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 33 (1889).

4457. Gold. In quartz. London Lease (673), London and German Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4458. . In quartz. Louisa N. Extd. Mine, Louisa Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4459. ——. In quartz. Lucknow P.C., Lucknow Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4460. ——. In quartz. Monkland 1 S. and Abyssinia Lease (518), Monkland Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, pp. 21, 22 (1889).

4461. ——. In quartz. Monkland 7 and 8 S. Lease (597), Monkland and Glanmire Reefs, and reef which is probably the Great Eastern, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 18 (1889).

4462. ——. In quartz. New Zealand P.C. Lease (393), New Zealand and Annie Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 33 (1889).

4463. ——. In quartz. New Zealand South Lease (655), New Zealand, Crown, and March Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 32 (1889).

4464. ——. In quartz. New Zealand South Junction (626), Eastern and Western Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 29 (1889).

4465. ——. In quartz. Nicholl's Lease (327), Inglewood, Monkland, Glanmire, "Old Eastern," and Gt. Eastern Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 16 (1889), and 100, p. 7 (1895).

4466. ——. In quartz. O'Connell P.C. Lease (620), Beehive, Louisa, and O'Connell Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4467. ——. In quartz reef. Oriental 1 N. and Glanmire Mine, Gympie Goldfield (*ante*). *Ref.* G.S.M.

4468. ——. In quartz reef. Otago North Mine, Gympie Goldfield (*ante*). *Ref.* G.S.M.

4469. ——. In quartz. Perseverance and Nil Desperandum Lease, Perseverance Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 31 (1889).

4470. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Phœnix Lease (829), western reef of the North Smithfield, Gympie Goldfield *ante*). *Ref.* G.S.Q. Pub. 100, p. 12 (1895), and G.S.M.

4471. ——. In quartz. Phœnix N. Freehold Lease (649), Phœnix Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 34 (1889).

4472. ——. In quartz. Phœnix 1 N. Lease (834), All Serene, Phœnix, Western, Smithfield, and New or Eastern Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 29 (1889), and 76, p. 3 (1891).

4473. ——. In quartz. Phœnix 2 N. Lease (805), Phœnix and other reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 13 (1895).

4474. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Phœnix 3 N. Lease (799), Victory Reef, and branches of Phœnix Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 32 (1889), 100, p. 14 (1895), and G.S.M.

4475. ——. In quartz. Phœnix 4 N. Lease (713), Victory, Smithfield, and Phœnix Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 3 (1889), and 100, p. 15 (1895).

4476. ——. In quartz. Phœnix 5 N. Lease (648), western and eastern reefs of the Crown and Phœnix, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 34 (1889).

4477. ——. In quartz. Phœnix 1 S. Lease (825), Banana, Wilmot Extd., Wilmot, Phœnix, Little Wonder, and St. Kilda Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, (1889), and 100, p. 10 (1895).

4478. ——. *Assoc.with* Iron Pyrites and Galena, in quartz and calcite. *Loc.* Phœnix 2 S. Lease (512), Monkland (Shannon) Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 24 (1889).

4479 ——. In quartz. Phœnix Golden Pile Lease (817), Eastern (Western Smithfield), Western, and other Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 4 (1889), and 100, p. 14 (1895).

4480. ——. In quartz. Phœnix P.C. Lease (514), Phœnix and Phœnix Eastern Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, pp. 27, 28 (1889).

4481. ——. In quartz. Scottish Gympie Gold Mines, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 166, p. 6 (1901).

4482. ——. In quartz. Shaun O'Farrell and South New Zealand Lease (634), now Ellen Harkins 1 N., Ellen Harkins Reef, and supposed Hilton Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 27 (1889).

4483. ——. In quartz. Smithfield N. Lease (626), Smithfield and Western Smithfield Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 76, p. 5 (1891), and 100, p. 13 (1895).

4484. ——. In quartz. Smithfield 1 N. Lease (707), Columbia Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 13 (1895).

4485. ——. *Assoc.with* Native Arsenic, in quartz reef. *Loc.* Smithfield No. 1 North, Gympie Goldfield (*ante*). *Ref.* B.D.

4485A. ——. In quartz. Smithfield 2 and 3 S. Lease (316), Smithfield and Columbia Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, pp. 22, 23 (1889).

4486. ——. In quartz and calcite, spotted with chlorite. *Loc.* Smithfield United Lease (319), Smithfield and Columbia Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 23 (1889).

4487. ——. In black shale. Sultan 1 N. Mine, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4488. ——. In quartz reef. Sultan and Lucknow Lease (864), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 16 (1895).

4489. ——. In quartz. Two-mile Gold Mines, Peter and Paul and All Serene Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 166, p. 16 (1901).

4490. ——. In quartz. Union Extended Lease (511), Monkland Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 22 (1889).

4491. ——. In quartz. Walton Extended Lease (409), Mt. Pleasant and Walton Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 25 (1889).

4492. ——. *Assoc.with* Iron Pyrites, in calcareous shale and quartz. *Loc.* Wilmot Extd. Lease (807), 628 (?), Wilmot (or Middle), Western, and Russell Reefs, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 24 (1889), and 100, p. 10 (1895).

4493. ——. *Assoc.with* impure Graphite. In many of the quartz reefs on the Gympie Goldfield (*ante*).

4494. ——. In quartz. All Serene Reef, in Phœnix 1 N. Lease, Gympie Golden Crown Mine, and Two-mile Gold Lease, Two Mile, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 76, p. 7 (1891).

4495. ——. In quartz. Alma Reef, in Lady Mary, 2 N. Lease (411), Caledonia United Lease (312), and Lady Mary 7 S. Lease (670), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, (1889).

4496. ——. In quartz. Annie Reef, in New Zealand P.C. Lease (593), and Gt. New Zealand Lease (815), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 33 (1889), and 100, p. 15 (1895).

4497. ——. In quartz. Banana Reef, in Phœnix No. 1 S. Lease (825), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 10 (1895).

4498. ——. In quartz. Beehive Reef, in O'Connell P.C. Lease (620), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4499. ——. In quartz. Caledonia Reef, in Lady Mary 3 and 4 N. Lease (228), Lady Mary 2 N. Lease (411), Caledonia United Lease (312), and Lady Mary 7 S. Lease (670), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52 (1889).

4500. ——. In quartz. Columbia Reef, in Columbia and Smithfield Lease (672), Smithfield, 1 N. Lease (707), Smithfield United Lease (319), and Smithfield 2 and 3 S. Lease (316), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52 (1889), and 100, p. 13 (1895).

4501. ——. In quartz. Crown Reef, in Golden Crown Lease (613), and New Zealand S. Lease (655), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52 (1889).

4502. ——. In quartz. Diorite Reef, in Gt. Eastern 2 N. Lease (724), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 76, p. 4 (1891), and 100, p. 9 (1895).

4503. ——. In quartz. Dodd's Reef, in Alliance 1 S. Lease (625), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 32 (1889).

4504. ——. In quartz. Ellen Harkins Reef, in Ellen Harkins 1 N. Lease (634), 1 S. Lease (636), and Lease (568), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52 (1889), and 100 (1895).

4505. ——. In quartz. German Reef, in London Lease (673), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4506. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Glanmire Reef, in Glanmire P.C. Lease (598), Monkland 7 and 8 S. Lease (597), Nicholl's Lease (327), and Gt. Monkland Lease (629), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52 (1889), and 100 (1895).

4507. Gold. In quartz. Reefs Nos. 1 and 2 (probably branches of Glanmire Reef), in Glanmire 1 N. Lease (602), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889), and 100, p. 7 (1894).

4508. ——. In quartz. Glanmire and Monkland S. No. 4 Reef, in Gt. Eastern 2 S. Lease, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 5 (1895).

4509. ——. *Assoc. with* Galena, in calcite and quartz. *Loc.* Gt. Eastern Reef, in Glanmire N. Lease (602), Monkland 7 and 8 S. Lease (597), Gt. Eastern Lease (588), Nicholl's Lease (327), Glanmire and Monkland S. Lease (403), and Glanmire 1 N. Lease, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52 (1889), 76 (1891), and 100 (1895).

4510. ——. In quartz. Hamburg and Hilton Reefs, in Hilton Extended Lease (638), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 31 (1889).

4511. ——. In quartz. Inglewood Reef, in Gt. Eastern 2 Lease (779), Glanmire and Monkland S. Lease (833), Inglewood United Lease (814), and Nicoll's Lease (327), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 76, p. 2 (1891), 100, pp. 5, 6, 7, 8 (1895).

4512. ——. In quartz. Lady Mary Reef, in Lady Mary N. Leasehold (686), N. Lease (505), 5 N. Lease (653), 3 and 4 N. Lease (228), 2 N. Lease (411), and 7 S. Lease (670), and Caledonia United Lease (312), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, pp. 36, 35, 83 (1889).

4513. ——. In quartz. Little Wonder Reef, in Phœnix 1 S. Lease (825), Gympie Goldfield (*ante*).

4514. ——. In quartz. London Reef, in London Lease (673), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4515. ——. In quartz. Louisa Reef, in O'Connell P.C. Lease (620), and Louisa N. Extended, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4516. ——. In quartz. Lucknow Reef, in Lucknow P.C., Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4517. ——. In quartz. March Reef, in Golden Crown Lease (613), and New Zealand S. Lease (655), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52 (1889).

4518. ——. In quartz. Monkland (Shannon) Reef, in Phœnix 2 S. Lease (512), Ellen Harkins S. and Wilmot Lease (669), Union Extended Lease (511), Monkland and Abyssinia Lease (493), Monkland 1 S. and Abyssinia Lease (518), Glanmire N. Lease (579), Gt. Monkland Lease (629), Monkland 7 and 8 S. Lease (597), and Nicholl's Lease (327), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52 (1889).

4519. ——. In quartz. Mt. Pleasant Reef, in Walton Extended Lease (409), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 25 (1889).

4520. ——. In quartz. New Zealand Reef, in New Zealand P.C. Lease (593), New Zealand S. Lease (655), and Crown and Phœnix Evtended Lease, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52 (1889), and 76, p. 6 (1891).

4521. ——. In quartz. O'Connell Reef, in O'Connell P.C. Lease (620), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 36 (1889).

4522. ——. In quartz. "Old Eastern" Reef, in Gt. Eastern Lease (588), Nicholl's Lease (327), and Glanmire and Monkland S. Lease (403), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52 (1889).

4523. ——. In quartz. Orient Reef, in Glanmire 1 N. Lease (602), Gt. Eastern 1 N. Lease (872), Gt. Eastern 1 S. Lease, Gt. Eastern and Orient Lease (821), Gt. Eastern 2 N. Lease (724), Gympie Goldfield. *Ref.* G.S.Q. Pubs. 76, p. 3 (1891), and 100, p. 8 (1895).

4524. ——. In quartz. Perseverance Reef, in Perseverance and Nil Desperandum Lease (622), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 31 (1889).

4525. ——. In quartz. Peter and Paul Reef, in Gympie Golden Crown Lease, Two-mile Gold Mines (1220), Two-mile, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 76, p. 7 (1891).

4526. ——. In quartz. Phœnix Reef, in Phœnix 1 N. Lease (353), 2 N. Lease (339), 3 N. Lease (515), (799 (?)), 4 N. Lease (648), N. Freehold Lease (649), 1 S. Lease (355), (825 ?), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52 (1889), 100, pp. 13, 14 (1895).

4527. ——. In quartz. Phœnix Reef (western and eastern), in Phœnix 5 N. Lease (648), and Golden Crown Lease (613), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52 (1889).

4528. ——. In quartz. Russell Reef, in Wilmot Extended Lease (628), (807 (?)), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 24 (1889)

4529. ——. In quartz. Smithfield Reef, in Smithfield N. Lease (626). United Lease (319), 2 and 3 S. Lease (316), and Phœnix 4 N. Lease (648), (815 (?)), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 23 (1889), and 100, p. 14 (1895).

4530. ——. In quartz. Smithfield Western Reef, in Smithfield N. Lease (626), Phœnix 1 N. Lease (834), and Phœnix Golden Pile Lease (817), Gympie Gldfield (*ante*). *Ref.* G.S.Q. Pub. 100, pp. 12, 13, 14 (1894).

4531. ——. In quartz. Western reef of Smithfield North, in Phœnix Lease (829), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 12 (1895).

4532. ——. In quartz. St. Kilda Reef, in Phœnix 1 S. Lease (355), (825 (?)), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 27 (1889).

4533. ——. *Assoc.with* Hessite, in quartz reef. *Loc.* St. Patrick's Reef, Gympie Goldfield (*ante*). *Ref.* A.R., p. 154 (1908).

4534. ——. In quartz. Reef (probably the Sydney Reef), in Walton Extended Lease (409), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 25 (1889).

4535. ——. In quartz. Main Reef, Nos. 1 and 2, in Glanmire 3 and 4 N. Lease (331), Gympie Goldfield (*ante*). *Ref.* G.S Q. Pub. 52, p. 20 (1889).

4536. ——. In quartz. Two Reefs, in Gt. Eastern 1 N. Lease (705), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 21 (1889).

4537. ——. In quartz. Victory Reef, Phœnix 3 N. Lease (799), and Phœnix 4 N. Lease (713), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 14 (1895).

4538. ——. In quartz. Walton Reef, in Walton Extended Lease (409), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 25 (1889).

4539. ——. In quartz. Western Reef, in Wilmot Extended Lease (807), Phœnix 1 S. Lease (825), Phœnix Golden Pile (817), and Gt. New Zealand Lease (815), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 100, p. 10 (1894).

4540. ——. In quartz. Western and Eastern Reefs, Phœnix 5 N. Lease (648), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52 (1889).

4541. ——. In quartz. Wilmot Reef, Phœnix 1 S. Lease (825), and Wilmot Extended Lease (628), (807 (?)), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 52, p. 24 (1889), and 100, p. 10 (1894).

4542. ——. *Assoc.with* Iron Pyrites, Galena, Zinc Blende, and Siderite, in quartz reef between walls of slate and diorite. *Loc.* Enterprise Reef, on br. of Cochrane Cr., 5½ miles N.W. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pubs. 52, p. 12 (1889), and 159, p. 2 (1907).

4543. ——. *Assoc.with* Galena and Zinc Blende, in quartz. *Loc.* Exhibition Reef, 6 miles N. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 52, p. 12 (1889).

4544. ——. In quartz reef. Gt. Gorge Mine, nr. O'Leary's Crossing, nr. Curra, 8 miles N.W. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 159, p. 31 (1901).

4545. ——. In quartz. Ora Reef, 7½ miles N. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 52, p. 12 (1889).

4546. ——. *Assoc.with* Iron Pyrites and Galena, in quartz. *Loc.* Veteran Reef, 7 miles N.N.W. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 52, p. 12 (1889).

4547. —— (traces). *Assoc.with* Stibnite and Cervantite, in calcite lode. *Loc.* Gympie Antimony Mine, nr. Sel. 3482, Chatsworth Scrub, 7 miles N.N.W. of Gympie. *Co.* March (*ante*). *Ref.* B.D.

4548. ——. *Assoc.with* Iron Pyrites, in gossany quartz. *Loc.* Devil's Mountain, 17 miles N.W. of Gympie. *Co.* March (*ante*). *Assay:* Gold = 1 oz. 9 dwt. 9 gr., Silver = 6 dwt. per ton. *Ref.* A.R., p. 157 (1908).

4549. ——. *Assoc.with* Silver, in quartz. *Loc.* S.E. of Devil's Mountain (*ante*). *Assay:* Gold = 5 dwt. 14 gr., Silver = 5 oz. 8 dwt. per ton. *Ref.* A.R., p. 160 (1908).

4550. ——. In quartz. Mt. Kelly, 3½ miles S.W. of Traverston Rail. Stn. (North Coast line), 16½ miles (by rail and road) S.E. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 94, p. 7 (1893).

4551. ——. In quartz reef. Mt. Smyth, 3½ miles S.W. of Traverston Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 94, p. 7 (1893).

4552. —— (traces). In quartz. *Loc.* Angabunga R. (below Camp 14), 64 miles N.W. of Port Moresby, **Brit. New Guinea.** *Ref.* A.R.B.N.G., p. 92 (1894).

4553. —— (traces). In quartz reef. Damora, Rossel Is., 480 miles E.S.E. of Port Moresby (*ante*). *Ref.* A.R.B.N.G., p. 91 (1894).

4554. —— (traces). In quartz reef. Rossel Is. (*ante*). *Ref.* G.S.Q. Pub. 55, p. 1 (1889).

4555. —— (traces). In quartz reef. Yongga Bay, Rossel Is. (*ante*). *Ref.* A.R.B.N.G., p. 91 (1894).

4556. Gold. *Assoc.with* Iron Pyrites, Psilomelane, Hematite, and Limonite, in quartz reef. *Loc.* Caledonia Claim, Sudest Is., 448 miles E.S.E. of Port Moresby, Brit. New Guinea. *Assay:* Gold = 9 dwt. 17 gr., Silver = 1 oz. per ton. *Ref.* G.S.Q. Pub. 85, p. 29 (1892), and G.S.M.

4557. ——. In quartz reef. Missing Link Claim, Sudest Is. (*ante*). *Ref.* G.S.Q. Pub. 85, p. 30 (1892).

4558. ——. In quartz. Rattle Snake Reef, Sudest Is. (*ante*). *Ref.* A.R.B.N.G., p. 96 (1894).

4559. ——. *Assoc.with* Iron Pyrites, in quartz reef. *Loc.* Busai, Woodlark Is., 384 miles E. of Port Moresby, Brit. New Guinea. *Ref.* G.S.M.

4560. ——. In quartz reef. Woodlark Is. (*ante*). *Ref.* G.S.M.

Gold-bearing Minerals. *See* Associated Metallic Minerals *under* Gold.

Gold Bores (records incomplete)—

Charters Towers Diamond Drill Bores (4). (No. 1, 564 ft.; No. 2, 578 ft.; No. 3, 517 ft.; No. 4, 2,135 ft.) *Co.* Davenport; *Dist.* North Kennedy. *Ref.* A.R.D.M., 1882, p. 12 (No. 1 Bore); 1883, p. 16 (Nos. 2 and 3 Bores); 1894, p. 158 (No. 4 Bore).

Clermont Alluvial Bores, Deep Cr. and Wild Cat Lead. *See* G.S.Q. Pub. No. 176, pp. 29, etc. *See* Geol. Surv. Pub. List for title.

Dunrobin Park, nr. Yaamba, Fitzroy R., Rockhampton District. *Co.* Livingstone; *Dist.* Port Curtis. Sunk for alluvial gold; no record available. *Ref.* A.R.D.M., 1889, p. 60.

Gympie Bores—

Ashton's (Diamond Drill). Lady Mary P.C. Lease (L. Mary and N. Zealand), corner of Alma and Pollock streets, Caledonia Hill. Depth, 740 ft. Sunk in 1879 by Hester. *Ref.* B.D.

Bore No. 1 (Diamond Drill), nr. corner of Excelsior, Perseverance, and River Roads. Depth, 630 ft. Sunk in July-December, 1890, by J. Cole. *Ref.* G.S.Q. Pub. 76, p. 2 (1891).

Bore No. 2 (Diamond Drill), nr. south-east corner of Mark lane and Watt street, close to Ellen Harkins Workings, Mt. Pleasant. Depth, 2,025 ft. Sunk in 1891-1892 by J. Cole. *Ref.* G.S.Q. Pubs. 94, pp. 4, 5 (1893), 100, p. 3 (1895).

Deep Lead Bores, on south side of Mary River. Note: Beehive Co. sunk six bores (41 ft., 50 ft., 51 ft., 47 ft., 56 ft., and 73 ft.), and another company sunk two more bores, all in 1880. *Ref.* A.R.D.M., 1880, p. 15.

Monkland Bore (Diamond Drill), S. Glanmire and Monkland Mine. Sunk from bottom of S. Glanmire and Monkland Eastern Shaft (Old Great Eastern Extended Shaft) at 990 ft. Depth of bore, 1,734 ft. Year, 1904. Sunk by Morgan Jones (Goldfields Diamond Drilling Co.). *Ref.* "Gympie Times," 8th July, 1905.

West of Scotland Mine Bore (Diamond Drill). Leases 1127 and 1128, Noosa Road. Sunk by Morgan Jones (Goldfields Diamond Drilling Co.) from bottom of shaft at 3,136 ft. Depth, 875 ft. Year, 1904. *Ref.* B.D.

Croydon Bores—

Iguana Hill (720 ft.). *Par.* Croydon; *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 17 (1896).

Highland Mary Bores (Nos. 1, 2, and 3). *Par.* Croydon; *Co.* Surrey; *Dist.* Burke. No. 1 (496 ft.), H.M. No. 1 S. Block. No. 2 (267 ft.), H.M. No. 1 N. Block. No. 3 (266 ft.), opp. the Glengarry. *Ref.* G.S.Q. Pub. 118, p. 21 (1896). Diagram of No. 1 Highland Mary Bore in A.R.D.M. 1891.

Gold Cr. (Pors. 23B, 241, and 289.) Brookfield. *Min.Ref.* Gold, *see* 4206; Iron Pyrites, 5341, 5342; Ironstone, 5613.

Gold Fields of Queensland. *See* Fields *under* Gold.

—— assoc.with Antimony in Queensland. *See under* Q.G.M.J., Report No. 33.

—— Mt. Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

—— —— Lease (20), Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3666.

—— —— Reef, Hamilton Goldfield. *Min.Ref.* Galena, *see* 2741; Gold, 3702; Iron Pyrites, 5032.

——, nr. Beenleigh. *See under* Q.G.M.J., Report No. 108.

Gold Nuggets. *See* Nos. 3435, etc.

Gold Statistics. *See tables and diagram,* Pls. 36, 45, 46, 46A, 47, *also under* Gold for statistical notes.

—— Telluride. *See* Calaverite and "Telluride Ore." *See also under* Hessite and Altaite.

Gold Top Prov. Goldfield, 4½ miles N.W.byW. of Kilkivan Rail. Stn. Discovered by Messrs. Reynolds and McKewen, 11th September, 1911. *Min.Ref.* Gold, *see* 4406A.

—— Wardens. *See* Wardens.

—— Workings. Mine Cr., trib. of Black Waterhole Cr. *Min.Ref.* Bismutite, *see* 409; Copper Pyrites, 2271; Gold, 4185; Mispickel, 6759; Silver, 7498; Hematite, 4758.

Golden Alexandra Lease (Golden Alexandra Reef), Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2886; Gold, 3905; Iron Pyrites, 5169.

—— —— Reef, Charters Towers Goldfield. *Min.Ref.* Gold, Galena, and Iron Pyrites, *see* 3953.

—— Bar Reef, Rosewood Goldfield. *Min.Ref.* Gold, *see* 4352.

—— Cross Lease, Grass-tree Goldfield. *Min.Ref.* Gold, *see* 4112; Ironstone, 5585.

—— Crown Mine, Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4099; Iron Pyrites, 5291.

—— —— P.C. (Golden Crown Reef), Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3638A.

—— —— Lease (613), Gympie Goldfield. *Min.Ref.* Gold, *see* 4438; Iron Pyrites, 5461.

—— —— Reef, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4022.

—— Fleece Reef, Twelve-mile, Croydon Goldfield. *Min.Ref.* Gold, *see* 3557.

—— Gate Mine, Charters Towers. *Min.Ref.* Galena, *see* 2887; Gold, 3906; Iron Pyrites, 5170.

Golden Gate Centre, Croydon Goldfield. *Min.Ref.* Alunogen, *see* 4; Argentine, 564, 565; Calcite, 463-467; Chalcanthite, 1317; Copper Pyrites, 2102; Epsomite, 2611; Fluorspar, 2654; Galena, 2698-2701; Gold, 3505-3519; Graphite 4578-4580; Halite, 4560; Hematite, 4691; Heulandite, 4819; Iron Pyrites, 4948-4952; Ironstone, 5494-5496; Limonite, 5801; Magnetite, 5968; Mispickel, 6644; Serpentine, 7378; Siderite, 7403; Silver (native), 7546; Stilbite, 7662; Vivianite, 7920; Zinc Blende, 8054.

GEOLOGICAL NOTE: The country rock is biotite granite, the most important reef in the locality being the Golden Gate. The gold, associated with fine particles of galena, occurs in shoots in the reef, the stone being rich where the adjacent granite is highly graphite-bearing. Barren quartz also occurs in the reef, and is known as "buck." *See* G.S.Q. Pub. No. 202 for details and maps.

—— —— Consols, Croydon Goldfield. *Min.Ref.* Gold, *see* 3507.

—— —— Gold Mines (Plant's Shaft), Croydon Goldfield. *Min.Ref.* Calcite, *see* 465, 466; Fluorspar 2653; Galena, 2698; Gold, 3512, 3513; Graphite, 4578; Heulandite, 4819; Iron Pyrites, 4949.

—— —— Ltd. Mine (Roger's No. 1), Croydon Goldfield. *Min.Ref.*, Gold, *see* 3507.

—— —— United Mine, Croydon Goldfield. *Min.Ref.* Gold, *see* 3507.

—— —— 7 N., 5 and 6 N., and Douglas Block Shaft, Croydon Goldfield. *Min.Ref.* Gold, *see* 3507; Iron Pyrites, 4948; Ironstone, 5494.

—— —— 9 N., 10 N., and 10 and 11 W. Croydon Goldfield. *Min.Ref.* Gold, *see* 3507; Mica, 6552.

—— —— 1 and 2 South, 3 and 4 South, 4 and 5 South Block, 5 South Mines, Croydon Goldfield. *Min.Ref.* Gold, *see* 3507.

—— —— 7 S., 8 S. (Baltic), 8 S. Block, 9 S., 9 S. Block, and 10 and 11 S. Block Mines. Croydon Goldfield. *Min.Ref.* Gold, *see* 3508.

Golden Gate Reef, Croydon Goldfield. *Min.Ref.* Alunogen, *see* 4; Argentine, 564, 565; Calcite, 463-467; Chalcanthite, 1317; Copper Pyrites, 2102; Copperas, 2334; Epsomite, 2611; Fluorspar, 2654; Galena, 2698-2701; Gold, 3515, 3516; Graphite, 4578; Halite, 4650; Heulandite, 4819; Iron Pyrites, 4949-4951; Ironstone, 5494; Limonite, 5801; Mispickel, 6644; Nail-head Spar, 604; Serpentine, 7378; Siderite, 7403; Silver (native), 7546; Stilbite, 7662; Vivianite, 7920; Zinc Blende, 8054.

—— —— and Nancy Lee Consols, Croydon Goldfield. *Min.Ref.* Gold, *see* 3508.

—— —— and Nancy Lee United (Viles's), Croydon Goldfield. *Min.Ref.* Gold, *see* 3508.

—— —— and Nancy Lee Reefs, Croydon Goldfield. *Min.Ref.* Calcite, *see* 466; Gold, 3513; Graphite, 4578.

—— —— Mine, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3809; Iron Pyrites, 5092.

—— —— Lease, Talgai Goldfield. *Min.Ref.* Gold, *see* 3851; Limonite, 5857; Manganese-dioxide, 6426.

—— —— Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4298.

—— Gully, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

—— ——, Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

—— Hill Lease (415), Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4033.

—— —— Reef. "Springs," Cape R. Goldfield. *Min.Ref.* Gold, *see* 4057; Iron Pyrites, 5267.

—— King Reef, Yarraden, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3710A.

—— —— Mine, Lucky Downs Diggings. *Min.Ref.* Gold, *see* 3879A.

—— Pile Shaft, Nanango Goldfield. *Min.Ref.* Gold, *see* 3624A.

—— Spur Reefs, Twelve-mile, Croydon Goldfield. *Min.Ref.* Gold, *see* 3557.

—— —— G.M.L. (50), Eastern Boyne Goldfield. *Min.Ref.* Gold, *see* 4255.

—— —— P.A., Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3639; Limonite, 5835.

—— Star United Mine, Mareeba Goldfield. *Min.Ref.* Gold, *see* 3776.

—— Treasure Mine, Tate Goldfield. *Min.Ref.* Biotite, *see* 303; Gold, 3669; Orthoclase Felspar, 7038.

—— —— Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

Golden Valley Centre, Croydon Goldfield. *Includes* Australian Beauty, Belfast, Bell Bird, Carpentaria, Defiance, Don Juan, Grace Leigh, Hercules, Isabella, King of Wallebadah, Lady Mabel, Monkland, Perseverance, Queen of the North, Try-it, and Venture Reefs. *Min.Ref.* Galena, *see.* 2710A, 2710A1; Gold, 3520-3523; Iron Pyrites, 4953-4954; Ironstone, 5496A.

—— —— Reef, Mt. Success. *Min.Ref.* Gold, *see,* 4003; Iron Pyrites, 5233; Limonite, 5877; Zinc Blende, 8136.

Golder's Sel., at Mt. Domville, 6 miles S.byW. of Millmerran. *Min.Ref.* Coal, *see* 1626IA.

Goldfields and their Principal Mining Centres. *See* Fields *under* Gold.

Goldfields Wardens. *See under* Wardens.

Goldsmith Cr. Centre, Etheridge Goldfield. *Includes* All Nations, Black Jack, Caledonia, Electron, Lady Franklin, Milky Way, Ropewalk, and other reefs. *Min.Ref.* Chalcanthite, *see* 1319; Copper carbonate, 1886; Copper Pyrites, 2144; Gold (reef), 3736-3739; Hematite, 4708; Iron Pyrites, 5053; Ironstone, 5521; Limonite, 5841; Manganese-dioxide, 6406; Silver, 7450A.

Goldstone Mining Centre, Croydon Goldfield. *See under* Twelve-Mile.

Goldsworthy Sub-artesian Bore. *See under* Artesian Bores. No. 225.

Good Friday Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 899; Copper, 1842; Serpentine, 7381; Steatite, 7683.

—— Hope Colliery, Yahmahnto, 5 miles S. of Ipswich. *Min.Ref.* Coal, *see* 1728, 1728A, 1728B.

—— —— Mine, Crow's Cr., Barmundoo Run. *Min.Ref.* Gold, *see* 4242; Iron Pyrites, 5358; Mispickel, 6785; Zinc Blende, 8184.

—— —— Reef, Limestone, Palmer Goldfield. *Min.Ref.* Gold, *see* 3675; Mispickel, 6674.

—— —— Mine, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3837.

—— Luck Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

—— —— Mine, 5 miles N. of Gympie. *Min.Ref.* Stibnite, *see* 7659.

—— —— United (Lancashire Lass No. 1 W.) Mine, Far Fanning. *Min.Ref.* Copper Pyrites, *see* 2222; Gold, 3991; Iron Pyrites, 5227; Mispickel, 6744.

—— —— Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

—— —— ——, Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2817, 2819; Gold, 3823; Iron Pyrites, 5095.

Goodar Stn., Goondiwindi. *Min.Ref.* Aragonite, *see* 88.

Goodman's Flat Opal Mines, 2½ miles N.W. of Duck Cr. *Min.Ref.* Opal (precious), *see* 6957.

Goodna Bores. No records. *See note under* Ipswich Coalfield, *under* Coal Bores.

—— Coal Mine, nr. Redbank Rail. Stn., 17 miles (by rail) W. of Brisbane. *Min.Ref* Coal, *see* 1739.

Goodwood (Burrum) Bore. *See under* Coal Bores.

Goody's (Carmichael's) Reef, Norton Goldfield. *Min.Ref.* Galena, *see* 3049; Gold, 4277; Iron Pyrites, 5376; Mispickel, 6792; Redruthite, 7302; Zinc Blende, 8194; Silver, 7524.

Googa Googa Cr., br. of Emu Cr. *Min.Ref.* Sapphire, *see* 2356.

Goolburra Bore. *See under* Artesian Bore. No. 152.

Goolha-Goolha Reef, The Springs, Coen Goldfield. *Min.Ref.* Galena, *see* 2812A; Gold, 3800.

Goombungee Town Bore. *See under* Artesian Bores. No. 352.

Goomburra, Par. of (Por. 113v). *Min.Ref.* Coal, *see* 1633A; Corundum, 2370A; Sapphire, 2362.

Goomgan, 20 miles S.W. of Tiaro Rail. Stn. (North Coast line). *Min.Ref.* Copper, *see* 1865.

Goondiwindi, 115 miles W.byS. of Warwick. *Lat.*, 28° 55′ S.; *Long.*, 150° 20′ E. *Min.Ref.* Aragonite, *see* 88.

Goondiwindi District Bores. *See under* Artesian Bores. No. 274.

—— Railway (cutting at Glen Road Crossing). *Min.Ref.* Opal (common), *see* 6974.

Goora Bore. *See under* Artesian Bores. No. 415.

Gooroomjam Cr. Diggings. *See* Scrub Paddock Diggings.

Gordon Bore. *See under* Artesian Bores. No. 334.

—— Co. Gregory South Dist. *See map*, Pl. 18.

—— Downs Lease Bore. *See under* Artesian Bores. No. 276.

Gordon's Gully, head of Leixlip Cr., near Calliope. *Min.Ref.* Gold (alluvial), *see* 3383; Limestone, 676.

Gore Limestone Quarry, 4 miles from Gore Rail. Stn., 48 miles from Warwick. *Min.Ref.* Limestone, *see* 648A.

Gore's (G.R.) Sub-artesian Bore. *See under* Artesian Bores. No. 447.

Gorge, Cloncurry R., 20 miles S. of Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3175.

——, Portal Cr., Upper Burdekin. *Min.Ref.* Magnetite (massive), *see* 6022.

—— Bore. *See under* Artesian Bores. No. 221.

—— Cr., Upper Cape Diggings. *Min.Ref.* Gold, *see* 4063, 4064.

—— Cr. to Zillmanton. *Min.Ref.* Limestone, *see* 632.

Gorman Cr. Bores. *See under* Artesian Bores. Nos. 207, 221, 379.

Goslarite. *Syn.*, White Vitriol, Zinc Vitriol. *Compo.*, Sulphate of zinc. *Colour*, usually white. *Lustre*, vitreous. Astringent. Soluble in water. *H.* = 2-2·5. *Sp.gr.* = 1·9-2·1.

4561. ——. As a secondary deposit. Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

Göthite. *Syn.*, Gœthite. *Compo.*, Hyd. oxide of iron. *Colour*, yellowish and brownish black. *Lustre*, adamantine. *H.* = 5-5·5. *Sp.gr.* = 4-4·4. *Contents* (*max.*), Iron 63 per cent.

4562. ——. *Assoc.with* Redruthite, Malachite, and Limonite, with traces of Gold and Silver, in quartz and schist. *Loc.* Mountain Maid M.L. (526), Columbiad Group, Duck Cr., 1¼ mile S.W. of Mt. Start, 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 140, 141 (1908).

4562A. ——. *Assoc.with* Gold, Native Copper, Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 219-224 (1908).

4563. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Limonite, in chloritic schist *Loc.* Brilliant M.C. (159), Timberoo Group, Friedman's Cr., 18 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 179, 180 (1908).

4564. ——. *Assoc.with* Limonite, Azurite, and Malachite. *Loc.* Lakeside, nr. Degilbo Rail. Stn. (Gayndah line), 58 miles (by rail) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* A.R., p. 134 (1908).

4565. ——. *Assoc.with* Limonite and Turgite. *Loc.* Por. 1847, Rolleston, Pittsworth, 31 miles (by rail) S.W.byS. of Toowoomba (main line). *Co.* Aubigny; *Dist.* **Darling Downs.** *Analysis:* Iron = 49·9 per cent., Titanium = nil, Silica and insoluble = 10·1 per cent., Phosphorus = 0·34 per cent., Sulphur = trace. *Ref.* G.S.Q. Pub. 194, p. 63 (1904).

4566. ——. *Assoc.with* Limonite and Turgite. *Loc.* Por. 2188, Rolleston, Pittsworth (*ante*). *Analysis:* Iron = 52·3 per cent., Titanium = nil, Silica and insoluble = 8·9 per cent., Phosphorus = 0·2 per cent., Sulphur = trace. *Ref.* G.S.Q. Pub. 194, p. 63 (1904).

4567. ——. *Assoc.with* Hematite, Limonite, Iron Pyrites, Mispickel, Cassiterite, Azurite, Malachite, Wolfram, Websterite, Fluorspar, Chlorite, Penninite, and Topaz, in quartz lodes. *Loc.* Tin Mines, Coolgarra, Return Cr., 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell. *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

4568. ——. In stalactitic form. Stradbroke Is., Moreton Bay, 24 miles E. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* P.R.S.Q., vol. 4, p. 61 (1887).

4569. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Hematite, Magnetite, Limonite, Pyrolusite, and Satin-Spar, in vesicular quartz, quartzite, and kaolin. *Loc.* Mt. Morgan Mine, Mt. Morgan Goldfield, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* **Port Curtis.** *Ref.* P.R.S.Q., vol. 4, p. 61 (1887).

Gould Co. Cook Dist. *See map*, Pl. 8.

Gould's Sel., Por. (137), Par. of Logan, N. of Beaudesert. *Min.Ref.* Coal, *see* 1779A.

Goulvain (Dobu) Is., Brit. New Guinea. *Min.Ref.* Opal *var.* Sinter, *see* 7024; Sulphur (native), 7669.

Govatt's Bore. *See under* Artesian Bores. No. 40.

—— and Ore's Bore. *See under* Artesian Bores. No. 234.

Government Assistance to Mining. (Prospecting, Deep-sinking, Machinery.) *See under* Subsidies for details.

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Government Geologists of Queensland—

Aplin, H. D'O.—
Geologist of Southern Queensland, 1868 and 1869.

Daintree, R.—
Geologist of Northern Queensland, 1868 to 1871.

Gregory, Sir A. C.—
Geologist of Southern Queensland, 1875 to 1879.

Jack, Dr. R. L.—
Geologist of Northern Queensland, 10-7-1877 to 1891.
Then Government Geologist of Queensland, 1892 to 16-9-1899.

Rands, W. H.—
Assistant Geologist, 24-12-1883 to 1898.
Acting Government Geologist of Queensland, 1898 to 1899.
Government Geologist of Queensland, 1899 to 30-6-1902.

Dunstan, B.—
Assistant Geologist, 11-3-1897 to 1902.
Acting Government Geologist of Queensland, 1902 to 1908.
Government Geologist of Queensland, 1908 to date.

—— GEOLOGISTS PRIOR TO SEPARATION OF QUEENSLAND FROM NEW SOUTH WALES—
Clarke, Rev. W. B., 1853 (?) to —
Stutchbury, S., Government Geologist of N.S. Wales, 1850 to 1855.

—— GEOLOGISTS (ASSISTANT)—
Maitland, A. G., 6-12-1888 to 20-10-1896.
Skertchly, S. B. J., 19-6-1895 to 1-7-1897.
Cameron, W. E., 11-3-1897 to date.
Maclaren, J. M., 21-3-1900 to 31-1-1901.
Ball, L. C., 16-8-1900 to date.
Jackson, C. F. V., 8-2-1901 to 31-5-1903.
Marks, E. O., 19-11-1908 to 31-7-1913.
Saint-Smith, E. C., 4-1-1913 to date.

Government Mining Journal (Queensland). First issue, June, 1900. First Editor, late W. O. Hodgkinson. Present Editor, W. J. Morley (appointed July, 1900). Issues: Vol. 1 (1900) to date. Subscription: 6d. per copy; 6s. per annum; posted within Commonwealth, 6s. 6d.; beyond Commonwealth, 8s. per annum. Issued on the 15th of every month. *Publishers:* Gordon and Gotch, Queen street, Brisbane. Circulates throughout the Commonwealth, New Zealand, Gt. Britain, America, France, Germany, etc. *Contents:* General Articles relating to Mining Operations, Mining Machinery, and Ore Treatment; Reprints of Geological Survey Official Reports; Wardens' and Mines Inspectors' Reports; London and Commonwealth Metal Market Quotations; Records of Mining Companies' Output and Operations; Official Mining Statistics concerning Mineral Yields, etc., etc.

Government Mining Journal Special Report—

See also under name of Author.

(1) Red Queen and Black Diamond Mines, near Taromeo. By L.C.B. Vol. 1, p. 198 (1900).
(2) Murphy's Cr. Coal Measures. By W.H.R. Vol. 1, p. 212 (1900).
(3) Coen Goldfield. By W. M. Lee-Bryce, Warden. Vol. 2, p. 130 (1901).
(4) Montalbion and neighbouring Silver-Lead Mines. By T. B. Mackinlay, Inspector of Mines. Vol. 2, p. 131 (1901).
(5) Queensland Goldfields—On the Conditions and Modes of Working. By Wm. Blane. Vol. 2, p. 207 (1901).
(6) Queensland Silver-Lead Mines, Ltd., Lawn Hills. By Messrs. Armstrong and Carter. Vol. 2, p. 329 (1901).
(7) Ravenswood Ore (Refractory), Treatment in England of Lancashire Lass sample by May's Process. Report to Agent-General by Mr. Cornish. Q.G.M.J., vol. 2, p. 406 (1901).
(8) Hamilton and Coen Goldfield. By W. M. Lee-Bryce, Warden. Q.G.M.J., vol. 2, p. 432 (1901).

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See also under name of Author.

(9) Ravenswood Mines. By H. S. Warde, Inspector of Mines. Vol. 2, p. 488 (1901).

(10) Targinie Reefs. By W.E.C. Vol. 2, p. 529 (1901).

(11) Crocodile Goldfield. By Murray Russell, Inspector of Mines. Vol. 3, p. 365 (1902).

(12) Mungana Mines. By T. B. Mackinlay, Inspector of Mines. Vol. 3, p. 476 (1902).

(13) Nymbool (Smith's Cr.) Tin Mines. By T. B. Mackinlay, Inspector of Mines. Vol. 3, p. 478 (1902).

(14) Coal at Bringabilly Creek, parish of Mingimarny. By C.F.V.J. Vol. 3, p. 562 (1902).

(15) Found-at-Last Gold Mine, Gladstone. By L.C.B. Vol. 3, pp. 606, 607 (1902).

(16) Queensland Gem Industry. By Sir Horace Tozer, Agent-General for Queensland. Vol. 4, pp. 63-66 (1903).

(17) Anakie Sapphire Field (Report on Gems from). By Sir Horace Tozer, Agent-General for Queensland. Vol. 4, pp. 63-66 (1903).

(18) Queensland Iron Ores. Report presented to the Federal Bonus Commission. Vol. 4, p. 126 (1903).

(19) Mt. Hector. By C.F.V.J. Vol. 4, p. 174 (1903).

(20) Dattu Dattu Mine, Brisbane River Valley. By W.E.C. Vol. 4, p. 188 (1903).

(21) Stanthorpe District. By William Fryar, Inspector of Mines. Vol. 4, p. 207 (1903).

(22) Annual Notes. On Gigoomgan; Gaeta Goldfield; Stanthorpe (Notes on Gems); Blackall Range; Mt. Rainbow Goldfield; Kroombit; Cania Goldfield; Raglan Goldfield; Gladstone; Buderim; and Glasshouse Mountains. By L.C.B. Vol. 4, p. 298 (1903).

(23) Morinish and Blackfellow's Gully. By A. E. Fryar, Inspector of Mines. Vol. 4, p. 312 (1903).

(24) Mt. Perry. By T. B. Mackinlay, Inspector of Mines. Vol. 4, p. 315 (1903).

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(26) Dee River, Gold Discovery in Bed of the. By J. C. Linedale, Warden. Vol. 4, pp. 481, 489, 546, and 601 (1903).

(27) Mt. Molloy Copper Mines. By Murray Russell, Inspector of Mines. Vol. 4, p. 487 (1903).

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(31) Federal Bonus Commission. Vol. 4, p. 586 (1903).

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(34) Tinstone on Rocky Cr., trib of Brovinia Cr., Burnett District. By L.C.B., in vol. 5, p. 62 (1904).

(35) Gold Find at Scotland Hills, near Gayndah. By L.C.B. Vol. 5, p. 123 (1904).

(36) Cadarga Cr. Mines, Gayndah District. By L.C.B. Vol. 5, pp. 162, 163 (1904).

(37) Oaks Station, Central District. Gold Find near—By H. S. Warde, Inspector of Mines. Vol. 5, p. 187 (1904).

(38) Coal, Logan District. Sinking for—By William Fryar, Inspector of Mines. Vol. 5, p. 296 (1904).

(39) Central Queensland Coal. By B.D. Vol. 5, pp. 330, 331 (1904).

(40) Russell Goldfield. By Murray Russell, Inspector of Mines. Vol. 5, p. 347 (1904).

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(41) Anakie Sapphire Fields. By D. M. Jones, Warden. Vol. 5, p 347 (1904).

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(48) Cloncurry Copper Field. Special Report on its Ores. By Thomas Gibb, A.R.S.M. Vol. 5, pp. 554-558 (1904).

(49) O.K. Copper Mine. By Thomas Gibb, A.R.S.M. Vol. 5, p. 562 (1904).

(50) Jordan Cr. Goldfield. By Murray Russell, Inspector of Mines. Vol. 5, p. 580 (1904).

(51) Gold Deposits at the Head of the Don River, Central District. By L.C.B. Vol. 5, pp. 610, 611 (1904).

(52) Coal Mining Industry, Central Queensland. By L.C.B. Vol. 6, pp. 14-17 (1905).

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(64) Callide Cr. Coalfield, re Boring for Coal. By L.C.B. Vol. 7, p. 139 (1906)

(65) Kangaroo Hills Mineral Field, Second Report on. By W.E.C. Vol. 7, p. 239 (1906).

(66) Coal Measures near Townsville. By L.C.B. Vol. 7, pp. 406-409 (1906).

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(70) Croydon and Etheridge Goldfields. By C.F.V.J. Vol. 7, pp. 587, 588 (1906).

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(73) Queensland Gems. By Major J. R. Sankey (read before Queensland Br. of Royal Society, Brisbane, 22nd December, 1906). Vol. 8, p. 11 (1907).

(74) O.K. Copper Mine, North Queensland. By R.L.J. Vol. 8, pp. 16-19 (1907).

(75) Coal near the Mary River, West of Gundiah Railway Station. By B.D. Vol. 8, p. 127 (1907).

(76) Costs, Methods, and Record, as Applied to small and medium-sized Mines. By W. A. McLeod, B.A., etc. (read before N. Q'land Mg. and Mill Managers' Assoc., Charters Towers). Vol. 8, p. 233 (1907).

(77) Cannindah South Copper Mines. By R.L.J. Vol. 8, p. 315 (1907).

(78) Glenalvon Bores, Rosewood. By L.C.B. Vol. 8, p. 372 (1907).

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(89) Croydon, Stanhills, and Etheridge Fields. By B.D. Vol. 9, p. 455 (1908).

(89A) Roma Bore. Memo. *re* striking of gas in. By W.E.C. Vol. 9, p. 591 (1908).

(89B) Roma Bore (fire). Vol. 10, pp. 5-7 (1909).

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(95) Supposed Discovery of Coal near Pentland. By E.O.M. Vol. 11, p. 179 (1910).

(96) New Einasleigh Copper Mine. By S. Horsley, M.C.E., Inspector of Mines. Vol. 11, p. 222 (1910).

(97) Mt. Warminster. Notes in Connection with Diamond Drilling. By L.C.B. Vol. 11, p. 231 (1910).

(98) Oaks Goldfield. By S. Horsley, M.C.E., Inspector of Mines. Vol. 11, p. 257 (1910).

(99) Coal Discoveries near Chinchilla. By E.O.M. Vol. 11, p. 286 (1910).

(99A) Coal, Gravel, and Water, East Moreton. By E.O.M. Vol. 11, p. 285 (1910).

(100) Geology of Mount Morgan, Queensland. By J. M. Newman and G. F. Campbell Brown. Vol. 11, pp. 334-337 (1910).

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See also under name of Author.

(101) Great Fitzroy Mines, Limited. By J. Adam. (Paper read at the Mt. Morgan meeting of the Australasia Inst. of M. Engineers.) Vol. 11, pp. 337, 338 (1910).

(102) Cape River Goldfield. Memo. *re* Application from Residents for Assistance in Prospecting the Field. By E.O.M. Vol. 11, p. 340 (1910).

(103) Burrum Coalfield. Proposal to Test the Lower Measures. By W.E.C. Vol. 11, p. 341 (1910).

(104) Burrum Coalfield. Proposal to Test the Lower Measures. By B.D. Vol. 11, pp. 341, 342 (1910).

(105) Copper near Murphy's Creek. By W.E.C. Vol. 11, p. 342 (1910).

(106) Coal near Dalby. Recent Discovery of. By W.E.C. Vol. 11, pp. 388-390 (1910).

(107) Petroleum in Queensland. By L.C.B. Vol. 11, p. 390 (1910).

(108) Discovery of Gold near Beenleigh. By L.C.B. Vol. 11, p. 418 (1910).

(109) Many Peaks Copper Mine. Opening of the Boyne-Valley Railway. Vol. 11, pp. 436-439 (1910).

(110) Queensland Mines Regulation Bill. Minister's Explanation of the Measure. Vol. 11, pp. 454-456 (1910).

(111) Prospecting in York Peninsula. Tour of Mr. Dickie and Party. Vol. 11, pp. 600-603 (1910).

(112) Ipswich Coal and Coke Syndicates' Property, Tivoli, North Ipswich. By W.E.C. Vol. 11, p. 603 (1910).

(113) Durham Consols, Etheridge Goldfield. By E.O.M. Vol. 11, p. 604 (1910).

(114) Mt. Thabor Coal Property, near Warwick. By W.E.C. Vol. 11, p. 605 (1910).

(115) Blair Athol Coal Mine, with Sketch Map of Coal-mining Leases and Prospecting Licenses at Blair Athol. Vol. 12, pp. 4-6 (1911).

(116) Southern Cross Gold and Scheelite Mine, Hodgkinson Goldfield. By L.C.B. Vol. 12, pp. 62, 63 (1911).

(117) Olivines in the Toowoomba Ranges. By W.E.C. Vol. 12, p. 118 (1911).

(118) Some "Outside" Mines, Charters Towers. By E. J. Laun, Assist. Inspector of Mines. Vol. 12, pp. 120-122 (1911).

(119) Mt. Shamrock Gold Mines. By B.D. Vol. 12, pp. 169-173 (1911).

(120) Magnesite on Forest Gate Farm, Mt. Davidson, near Toowoomba. By L.C.B. Vol. 12, p. 174 (1911).

(121) Herberton Deep Lead. Report *re* Drainage Proposals. By E.O.M. Vol. 12, pp. 212-214 (1911).

(122) Bennion's Block Mine, Croydon. By W.E.C. Vol. 12, p. 282 (1911).

(123) Miners' Health Commission. Extracts from the Report of the Commissioners. Vol. 12, pp. 330-344 (1911).

(124) Tripolite Deposits of Nerang. By B.D. Vol. 12, p. 367 (1911).

(125) Ventilation of Queensland Mines. Extract from Report by Royal Commission on Health of Miners, Etc. Vol. 12, p. 390 (1911).

(126) Bompa Silver-Lead Mines. By E.O.M. Vol. 12, p. 405 (1911).

(127) Mt. Perry District. By C.F.V.J. Vol. 12, p. 455 (1911).

(128) Wolfram and Molybdenite in Queensland. By L.C.B. Vol. 12, pp. 504, 564 (1911).

(129) The Search for Oil at Roma. By W.E.C. Vol. 12, p. 508 (1911).

(130) Mt. Mulligan Coal. By C.F.V.J. Vol. 13, p. 7 (1912).

(131) Proposed Malbon-Macgregor Railway. By C.F.V.J. Vol. 13, p. 13 (1912).

(132) Occurrence of Tinstone in the Burnett District. By L.C.B. Vol. 13, p. 107 (1912).

(133) Old Brovinia Goldfield. By L.C.B. Vol. 13, p. 111 (1912).

(134) Mines in the Parish of Taromeo. By L.C.B. Vol. 13, p. 111 (1912).

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See also under name of Author.
(135) Coal on the Oakey-Cooyar Line. By L.C.B. Vol. 13, p. 158 (1912).
(136) Notes on the Many Peaks Mine. By L.C.B. Vol. 13, p. 209 (1912).
(137) Mt. Emu Mining Field. By M. Russell (Inspector of Mines). Vol. 13, p. 258 (1912).
(138) Prospects of Coal at Esk. By E.O.M. Vol. 13, p. 322 (1912).
(139) Bowen River Coal Deposits. By B.D. Vol. 13, p. 485 (1912).
(140) Tannymorel Coal Mine. By E.O.M. Vol. 13, p. 485 (1912).
(141) Bompa Silver-Lead Mines. By E.O.M. Vol. 13, p. 522 (1912).
(142) Tin Discoveries at Redrock near Ballandean-Stanthorpe District. By E.O.M. Vol. 13, p. 539 (1912).
(143) Mt. Holmes Tin Mine. By L.C.B. Vol. 13, p. 541 (1912).
(144) The Oaks Rush Goldfield. By W.H.R. Vol. 13, p. 544 (1912).
(145) Geological Features of the Maryborough District. B.D. Vol. 13, p. 641 (1912).
(146) Rare Metal Mining in Queensland. By L.C.B. Vol. 14, p. 4 (1913).
(147) Kangaroo Hills. By E.O.M. Vol. 14, p. 60 (1913).
(148) Wolfram Mines of Mt. Carbine. By L.C.B. Vol. 14, pp. 63, 130, 180 (1913).
(149) Prospects of Natural Gas and Petroleum in Roma District. By W.E.C. Vol. 14, p. 174 (1913).
(150) Queensland Portland Cement Company's Deposits at Flinders and Gore. By B.D. Vol. 14, p. 187 (1913).
(151) Kerosene Shale in Queensland. By L.C.B. Vol. 14, p. 188 (1913).
(152) Notes on the Anakie Sapphire Fields. By L.C.B. Vol. 14, p. 233 (1913).
(153) Wyreema Gold Mine, Jordan Creek. By L.C.B. Vol. 14, p. 238 (1913).
(154) Notes on Tally-Ho Mine, Mackay District. By E.O.M. Vol. 14, p. 241 (1913).

Government Reserve (362), 10 miles S.W. of Nerang. *Min.Ref.* Tripolite, *see* 7033B.

—— Well, Winton. *Min.Ref.* Coal, *see* 1640.

Governor Blackall Reef, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4050; Iron Pyrites, 5263.

Gowan Co. Warrego Dist. *See map*, Pl. 18.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 322.

Gowrie. Seven miles (by rail) N.W.byN. of Toowoomba. *Min.Ref.* Coal, *see* 1623.

Geological Note: Basalt prevails as the surface rock in this locality, and forms a covering to productive coal measures belonging to the Ipswich Formation (Trias-Jura).

—— Coal Mine, nr. King's Rail. Siding (main line). *Min.Ref.* Coal, *see* 1623.

—— Creek, Black Ridge, Clermont Goldfield. *Min.Ref.* Dolomite, *see* 2589; Gold (alluvial), 3309-3312, 3343, 3344.

—— Lease and Resumption Bores. *See under* Artesian Bores. No. 277.

—— Little Plain, 10 miles (by rail) N.W.byN. of Toowoomba. *Min.Ref.* Magnetite, *see* 5998.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 352.

Grace Darling Lease (11), Normanby Goldfield. *Min.Ref.* Copper Pyrites, *see* 2259; Gold, 4128; Iron Pyrites, 5305; Ironstone, 5586; Mispickel, 6764; Siderite, 7414; Tetrahedrite, 7774; Yellow Ochre, 5936.

—— Leigh, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

Gracemere. Seven miles (by rail) W.S.W. of Rockhampton. *Lat.*, 23° 28′ S.; *Long.*, 150° 30′ E. *Min.Ref.* Magnetite, *see* 6047.

Grafton Range (Mt. Bassett No. 1) Sub-artesian Bore. *See under* Artesian Bores. No. 97.

Graham (R. D.)—

Geological Survey Publication:

140. Plans and Sections of Bundamba and Dinmore Districts, Ipswich Coal Field, 1898.

Grampian Bore, *See under* Artesian Bores. No. 379.

Granada Co. Burke Dist. *See map*, Pl. 20.

—— Lease Sub-artesian Bores. *See under* Artesian Bores. No. 278.

Grand Junction P.C., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3735; Silver, 7450.

—— —— Consolidated Leases (503 and 520), Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4033.

—— —— Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1044; Hematite, 4728.

—— Secret Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 900; Rock Crystal, 7186.

Grange Bore. *See under* Artesian Bores. No. 178.

Granite Camp, nr. Mt. Hartley, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 803.

—— Castle Silver-Lead Lode, Mt. Emu Plains Stn. *Min.Ref.* Cerussite, *see* 1188B; Galena, 2712A; Gold, 3561A; Massicot, 6521A. *See also* Q.G.M.J., vol. 11, pp. 135, 493 (1910).

—— Creek, Chillagoe. *Min.Ref.* Biotite, *see* 306.

—— ——, N.N.E. of Gilberton. *Min.Ref.* Cinnabar, *see* 1545.

—— ——. Flows into Palmer R., E.byS. of Maytown. *Min.Ref.* Cassiterite, *see* 837; Gold (alluvial), 3207. *Ref.* A.R.D.M. (1887), p. 88.

—— ——, Stanthorpe. *Min.Ref.* Cassiterite, *see* 984.

Grantham (14 miles from). *Par.* Whitestone. *Min.Ref.* Limonite, *see* 5900A.

Graphite. *Syn.*, Plumbago. *Compo.*, Carbon, often containing impurities, such as clay, iron, etc. *Colour*, steel grey, iron black. *Lustre*, metallic. Greasy. *Streak*, black. *H.* = 1-2; *Sp.gr.* = 2·09-2·3. *See map*, Pl. 5.

Geological Note: Pure graphite in workable quantities is unknown in the State, but inferior kinds are not uncommon. At Mt. Bopple a bedded deposit of large extent is found to be suitable for all purposes to which common graphite is applied. It has been formed by the alteration of beds of coal near intrusive rocks. On the Croydon Goldfield the reefs which pass through graphitic granite are often exceedingly rich in gold, and on the Gympie Goldfield reefs coming in contact with slate beds containing graphite are nearly always gold-bearing. *See* G.S.Q. Pub. No. 203 for Mt. Bopple notes.

Statistics: *See tables and diagrams*, Pls. 41, 45, 46-46A, 53.

Bibliography: *Principal Ref.* Dunstan (B.), G.S.Q. Pub. No. 203 (1906). *See* Geol. Surv. Pub. List for title.

4569A. ——. Corella Creek, 20 miles W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* O.R.

4570. —— (traces). *Assoc.with* Silver, Antimony, Massicot, Native Copper, Cuprite, Copper carbonate, and Calcite, in siliceous and talcose shales. *Loc.* Dugald Mine, Dugald R., 45 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 10, p. 3 (1885).

4571. ——. *Assoc.with* Cassiterite, in chloritic felsite formation. *Loc.* New Chum Mine, Stanhills Tinfield, about 32 miles S.E. of Croydon. *Co.* Esmeralda; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, pp. 7, 8 (1907).

4572. ——. *Assoc.with* Copper Ore, in large lode (?). *Loc.* Hampden Mine, 40 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Analysis:* Moisture = 5·25 per cent., Vol. Matter = 5·05 per cent., Fixed Carbon = 17·60 per cent., Ash = 72·10 per cent. *Ref.* G.S.Q. Pub. 203, p. 11, and A.R., p. 44 (1906).

4573. ——. In felsitic and porphyritic rocks. *Loc.* Belmore Ridge, 2 miles N.E. of Croydon Rail. Stn. (Normanton-Croydon line), 94 miles (by rail) S.E. of Normanton, Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 4 (1896).

4574 ——. *Assoc.with* Gold and Silver, in quartz reef. *Loc.* Black Snake P.C., 1 mile E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 37 (1897).

4575. Graphite (impure). *Assoc.with* Gold, Iron Pyrites, and Felspar, in quartz. *Loc.* Caledonia Reef, 1 mile N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, pp. 8, 9 (1887).

4576. —— (impure). *Assoc.with* Ironstone and Iron Pyrites. *Loc.* Come-at-Last Mine, 1¼ mile N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887), and 118, p. 51 (1896).

4577. ——. *Assoc.with* Gold. *Loc.* Elsie Reef, Mt. Angus, 2 miles E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 24 (1896).

4578. ——. *Assoc.with* Gold and Calcite, in granite. *Loc.* Plant's Shaft, G.G. Gold Mine, Golden Gate Mining Centre, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 202, pp. 26, 30-32 (1905).

4578A.—— (pure). In felsite country, Golden Gate Mining Centre (*ante*). *Ref.* G.S.Q. Pub. 202, p. 9 (1905).

4579. —— (impure). In granite country, Golden Gate Mining Centre (*ante*). *Ref.* G.S.Q. Pub. 202, p. 10 (1905).

4580. ——. *Assoc.with* Iron Pyrites, in metamorphic granite. *Loc.* From Golden Gate to the N.W. to Flanagan's on the S.E., from 4 miles N.W. to 12 miles E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 6 (1896).

4581. ——. In felsitic and porphyritic rocks. *Loc.* Homeward Bound Mining Centre, 4½ miles N.E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 4 (1896).

4582 ——. *Assoc.with* Hematite (micaceous), in quartz. *Loc.* Iron Duke Reef, Golden Gate, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 9 (1887).

4583. —— (impure). *Assoc.with* Gold, Iron Pyrites, Galena, and Hematite, in quartz. *Loc.* King of Croydon Reef, 6 miles S.E.byE. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 7 (1887).

4584. —— (impure). *Assoc.with* Gold and Ironstone, in quartz. *Loc.* Norah Reef, 1¼ mile N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

4585. —— (impure). *Assoc.with* Gold, Ironstone, and Chlorite, in quartz. *Loc.* Sir Walter Reef, ½-mile E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

4585A.——. *Assoc.with* Gold, in quartz. *Loc.* St. Patrick's Block Lease No. 502, 1½ mile N.W. of Croydon Township, Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 19 (1896).

4586. ——. In felsitic and porphyritic rocks. *Loc.* Surry Hills, 5½ miles S.E.byE. of Croydon Rail Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 4 (1896).

4587. ——. As inclusions in felsite and granite throughout the Croydon Dist., 94 miles (by rail) S.E. of Normanton. *Dist.* Burke.

4588. ——. As a large deposit (??). Greenbank, Rosslyn Run, 14 miles W. of Mt. Perry Rail. Stn. *Co.* Yarrol; *Dist.* **Burnett.** *Ref.* B.D.

4589. ——. In quartz. ¼-mile S. of Hospital Hill, Ebagoolah, Hamilton Goldfield, 33 miles W. of Port Stewart, 173 mies N.W.byN. of Cooktown. *Co.* Coen; *Dist.* **Cook.** *Ref.* G.S.M.

4590. ——. *Assoc.with* Gold, in quartz. *Loc.* May Queen Reef, 1½ mile S.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 163, p. 12 (1901), 209, p. 17 (1907).

4591. ——. *Assoc.with* Gold, in quartz. *Loc.* Lukin King Reef, Yarraden, 14 miles S. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 209, pp. 14, 15 (1907).

4592. ——. Nr Thornborough, 19 miles (by coach) N.N.W. of Dimbullah Rail. Stn. (Chillagoe line). *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 50 (1900).

4593. ——. As included nodules in quartz felsite. *Loc.* Watsonville, head of James Cr., 7 miles E.S.E. of Stannary Hills Rail Stn., 6 miles W. of Herberton. *Co.* Hodgkinson (*ante*). *Ref.* B.D.

4594. —— (inferior). In mica schist. Truxillo, 5 miles S.byW. of Fossilbrook, 53 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line). *Co.* Tate; *Dist.* Cook. *Ref.* A.R., p. 154 (1908), and G.S.M.

4595. ——. In crushed slate. Silver Spur Mine (at 300-ft. level), Texas, 43 miles W.S.W. of Stanthorpe Rail. Stn. (Main line). *Co.* Clive; *Dist.* **Darling Downs.** *Ref.* L.C.B.

4596. ——. Star of the South Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns-Herberton line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North**. *Ref.* P.R.S.Q., vol. 15, p. 50 (1900).

4597. ——. Nigger Cr., br. of Wild R., 3 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell (*ante*).

4598. ——. *Assoc.with* Iron Pyrites, Malachite, Magnetite, Ironstone, Garnet, and calcite. *Loc.* Double-barrel Cr., 27 miles (by rail) S. of Townsville (Great Northern line). *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* L.B. 2, pp. 720-729 (1891).

4599. —— (inferior). *Assoc.with* Chiastolite. *Loc.* Cape Upstart, between Bowen and Townsville, 40 miles N.W.byW. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* L.B. 1, pp. 113-120 (1879).

4600. ——. Homebush, 10 miles S.S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 143, p. 6 (1899).

4601. —— (impure). In shale. *Loc.* Palm-tree Gully, N. of Scrubby Cr., 9 miles S. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 203, p. 10 (1906).

4602. —— (impure). In shale. *Loc.* Scrubby Cr. (*ante*). *Ref.* G.S.Q. Pub. 203, p. 10 (1906).

4603. —— (impure). In sedimentary rocks. *Loc.* Sels. 776 and 777, Par. of Eton, Homebush Hill, about 9 miles S.S.W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 203, p. 10 (1906).

4604. ——. *Assoc.with* Gold, in siliceous schist. *Loc.* Carrington's Sel. (32), Coomera R., 38 miles (by rail) S.E. of Brisbane (South Coast line). *Co.* Ward; *Dist.* **Moreton**. *Ref.* G.S.Q. Pub. 51, p. 5 (1889).

4605. ——. In Sandstone. Stanwell Quarry, 16 miles (by rail) S.W.byW. of Rockhampton (Central line). *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

4606 ——. *Assoc.with* Iron Pyrites, Hematite, and Calcite, with traces of Copper, in diorite. *Loc.* Campbell's Reef, Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 179, p. 8 (1902), and G.S.M.

4607. ——. In quartz reef. *Loc.* Columbia and Smithfield Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane (North Coast line). *Co.* March; *Dist.* Wide Bay. *Ref.* L.C.B.

4608. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Smithfield United Mine, Gympie Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 45 (1887).

4609. —— (impure). *Assoc.with* Gold. In many of the quartz reefs on the Gympie Goldfield (*ante*).

4610. ——. *Assoc.with* Anthracite Coal, in sedimentary rocks. *Loc.* Mt. Bopple, 3 miles S.E. of Netherby Rail. Stn. (North Coast line). *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pubs. 59, p. 4 (1890), and 203, p. 8 (1906).

4611. ——. An accessory constituent of schistose rocks. Brit. New Guinea (Port Moresby), 380 miles N.byE. of Cooktown. *Ref.* G.S.Q. Pub. 85, p. 31 (1892).

Grassdale, 2 miles E. of Belmont. *See under* Q.G.M.J., Report No. 99A.

Grassmere Station Bore. *See under* Artesian Bores. No. 279.

Grass-stone. *Syn.* Sagenite, *var. of* Quartz containing needles of Rutile. *See under* Rutile.

Grass-tree Cr., trib. of Annan R., S. of Cooktown. *Min.Ref.* Cassiterite, *see* 780.

Grass-tree Goldfield—

Situation: *See maps,* Pls. 14, 15. 17 miles S.byE. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. Centre about *Lat.* 21° 20′ S., *Long.* 149° 25′ E.

Discovery: In 1886.

Proclamation: First (and only one) gazetted, Nov. 14th, 1894, as follows:—Commencing on the sea coast at the south-east corner of portion 1401, and bounded thence on the north by that portion bearing west to portion 949; on the west by that portion bearing south to portion 1137, by that portion east and south to portion 976, and by that portion east and south to Cabbage-tree Creek; on the south by that creek downwards easterly to the south-west corner of Reserve for Public Purposes pro-

Grass-tree Goldfield—*continued:*

claimed in the *Government Gazette* 29th September, 1894, page 693; on the east by the west boundary of that reserve bearing north about thirty-seven chains, by the north boundary of same east to the sea coast, and thence by the sea coast north-westerly to the point of commencement.

Area: 1,328 acres (2$\frac{3}{40}$ sq. miles).

Mineral Statistics: *Included in* "Other Goldfields" *in tables and diagrams,* Pls. 36, 46, 46a, 47.

Mineral References: Gold, 4108-4116; Iron (Ironstone) 5585, (Limonite) 5885.

Geological Note: The original rocks appear to have been sandstones and shales. These have been altered and partly replaced by intrusive dykes, the whole of which, sedimentaries and dykes, having subsequently undergone a considerable amount of decomposition. The lodes at the Grass-tree Hill are of large dimensions, being made up of breccia, diorite, kaolin, ironstone, and other rocks, and containing from traces up to several ounces of gold per ton.

Geological Publications: Reports—Nos. 53 (1889) and 93 (1893). *See under* Geol. Surv. Pub. List for title.

Warden: Stationed at Mackay.

Inspector of Mines: Stationed at Rockhampton.

Gravel Reserve, Par. of Capalaba. *Min.Ref.* Gold, *see* 4208.

Graveyard Gully, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

Grazing Farm Reserve, Strathalpine. *Min.Ref.* Stibnite, *see* 7638.

Greasy (or Woolshed) Bore. *See under* Artesian Bores. No. 153.

—— Bill's Gully, nr. Mt. Leyshon. *Min.Ref.* Gold (alluvial), *see* 3258.

—— —— Reef, Pyramids or Seventy-mile Diggings. *Min.Ref.* Gold, *see* 3984; Hematite, 4735; Iron Pyrites, 5223; Psilomelane, 7090; Pyrrhotite, 7160.

Great Australia Group of Copper Mines, Cloncurry Township.. *Includes* Gt. Australia M. Freeholds, M. Freeholds Nos. 2, 3, 4, 10, 19. Cave Canem, Ma Foi, Lady Mina, Mata M. Leases. *Min.Ref.* Copper (native), *see* 1976, 1977; Cuprite, 2386-2388; Iron Pyrites, 4919; Limonite, 5748; Malachite, 6080; Redruthite, 7207; Tenorite, 7708, 7709; Tetrahedrite, 7751.

—— —— Copper Freehold (A1), Cloncurry. *Min.Ref.* Copper (native), *see* 1976; Cuprite, 2386; Iron Pyrites, 4919; Malachite, 6080; Tenorite, 7708; Tetrahedrite, 7751.

—— Ban Ban Zinc Lode. *See under* Ban Ban.

—— Basalt Wall, about 48 miles W. of Charters Towers. *Min.Ref.* Augite, *see* 141; Felspar, 2640; Magnetite, 6008.

—— Britain Silver Mine, Coolgarra. *Min.Ref.* Bismuthinite, *see* 372; Galena, 2844; Zinc Blende, 8107.

—— —— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1084.

—— Eastern Mine (Stewart's), Cadarga. *Min.Ref.* Limonite, *see* 5833; Manganese-dioxide, 6402.

—— —— Copper Mine, 14 miles N.E.byN. of Percyville. *Min.Ref.* Copper Ore, *see* 2033a.

—— —— Lease (588), Gympie Goldfield. *Min.Ref.* Gold, *see* 4439.

—— —— 2 Lease (779), Gympie Goldfield. *Min.Ref.* Galena, *see* 3083; Gold, 4442; Iron Pyrites, 5462.

—— —— Extended Mine, Gympie Goldfield. *Min.Ref.* Gold, *see* 4440.

—— —— 1 North (872), 2 North (724) Leases, Gympie Goldfield. *Min.Ref.* Gold, *see* 4441, 4443.

—— —— 1 South and 2 South Mines, Gympie Goldfield. *Min.Ref.* Altaite, *see* 3, 3a; Gold, 4444, 4445; Hessite, 4816, 4817; Molybdenite, 6867; Telluride Ore, 7704.

—— —— and Orient L. (821), Gympie Goldfield. *Min.Ref.* Gold, *see* 4446.

—— —— Mine, Paradise Goldfield. *Min.Ref.* Gold, *see* 3610.

—— —— Mine, Towalla Goldfield. *Min.Ref.* Gold, *see* 3782.

—— —— Reef, Table Top, Croydon Goldfield. *Min.Ref.* Gold, *see* 3547.

—— —— Reef, Gympie Goldfield. *Min.Ref.* Galena, *see* 3084; Gold, 4509.

—— —— and No. 1 Tin Mines, Herberton. *Min.Ref.* Cassiterite, *see* 1085, 1085A; Cuprite, 2455; Fluorspar, 2672; Kaolin, 5687.

—— —— Tin Mine, 3 miles S.E. of Stannary Hills Rail. Stn. (Chillagoe Br. line). *Min.Ref.* Cassiterite, *see* 850.

—— —— Tin Mine (Block 24), Red Rock Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1008, 1030; Chrysocolla, 1521; Copper Pyrites, 2190; Mispickel, 6725, 6730; Wolfram, 7997, 8005.

—— Extended Opal Mine, Yowah Opal Field. *Min.Ref.* Opal (precious), *see* 6963.

Great Fitzroy Copper Mine, Mt. Chalmers. *Min.Ref.* Azurite, *see* 251; **Barytes,** 279; Copper Pyrites, 2298; Gold, 4323; Iron Pyrites, 5401; Jasper, 5665; Malachite, 6364; Silver, 7530; Zinc Blende, 8202. *See also under* Q.G.M.J., Report No. 101. Smelting Works: *See under* "Smelting Works in Queensland."

—— Freehold Mine, Mt. Drain, Mt. Perry. *Min.Ref.* Gold, *see* 3582; Hornblende, 4823; Iron Pyrites, 4984; Magnetite, 5973.

—— Gorge Mine, nr. O'Leary's Crossing, N.W. of Gympie. *Min.Ref.* Gold, *see* 4544.

—— Kaufman Mine, Rannes Goldfield. *Min.Ref.* Gold, *see* 4184.

—— Kennedy Silver Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 48; Gold, 4089; Iron Pyrites, 5283.

—— Keppel Island. *See under* Keppel Bay Islands for geological note.

—— Monkland Lease (629), Gympie Goldfield. *Min.Ref.* Augite, *see* 143; Chlorite, 1469; Gold, 4447.

—— New Zealand Lease (815), and 1 N. Lease (849), Gympie Goldfield. *Min.Ref.* Gold, *see* 4448; Telluride Ore, 7705.

—— North Lode, Mt. Morgan Goldfield. *Min.Ref.* Gold, *see* 4365; Iron Pyrites, 5420.

—— Northern Copper Mine, Rosewood Goldfield. *Min.Ref.* Copper Oxides, *see* 2054; Copper Pyrites, 2301; Gold, 4353.

—— —— P.C., Coen Goldfield. *Min.Ref.* Gold, *see* 3694.

—— —— Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Great Northern Tin Mine, Herberton. DISCOVERY: Tin found in gully at the Great Northern Mine by Newell and Mattherson in 1879. *Min.Ref.* Azurite, *see* 212; Biotite, 307; Cassiterite, 1086-1089; Chlorite, 1450; Fluorspar, 2673; Hornblende, 4832; Malachite, 6282; Mispickel, 6737; Orthoclase, 7045; Serpentine, 7386; Steatite, 7686; Wolfram, 8019.

—— Pyramid Copper and Silver Mine, Cressbrook Cr. *Min.Ref.* Azurite, *see* 240; Malachite, 6344.

—— —— Mine (Saxon Shaft), Cressbrook Cr. *Min.Ref.* Copper Pyrites, *see* 2274; Galena, 3028; Iron Pyrites, 5333; Tenorite, 7738; Zinc Blende, 8174.

—— Sandy Is. *See* Fraser Island.

—— Southern Mine, Mt. Biggenden. *Min.Ref.* Galena, *see* 2724; Iron Pyrites, 4996; Zinc Blende, 8066.

—— —— Tin Mine, Irvinebank. *Min.Ref.* Bismuth (native), *see* 332; Bismuthinite, 365; Cassiterite, 863; Chlorite, 1432.

—— Tasman Reef, Glastonbury Goldfield. *Min.Ref.* Gold, *see* 4396.

—— Western P. Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1090.

—— —— and 1 W. Mines, Watsonville. *Min.Ref.* Cassiterite, *see* 901; Copper Pyrites, 2158; Felspar, 2635; Mispickel, 6691; Orthoclase, 7040; Rock Crystal, 7187.

—— Wheal Busy Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 902; Galena, 2783; Iron Pyrites, 5064.

Green Hill (E. side of), 40 miles S. of Mackay. *Min.Ref.* Copper, *see* 1858; Gold, 4348; Limonite, 5915.

—— —— (mouth of inlet, nr.). S. of Mackay. *Min.Ref.* Gold, *see* 4347; Ironstone, 5623.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 281.

Green Hills Goldfield—

SITUATION: *See maps*, Pls. 8, 9, 32. The goldfield is 24 miles S.W.byS. of Georgetown, Etheridge Goldfield. *Cos.* Gilbert and Lang; *Dist.* Cook. Centre about *Lat.* 18° 30′ S., *Long.* 143° 15′ E.

DISCOVERY: In 1896.

POPULATION: Included in Etheridge Goldfield return.

AREA: 128,640 acres (201 sq. miles).

PROCLAMATION: First (and only one) gazetted, 23rd April, 1896, as follows:—Commencing on the right bank of the Gilbert River at the south-west corner of the Green Hills No. 8, and bounded thence on the north by the south boundary of that run and a line east about 11 miles; on the east by a line south 10 miles; on the south by a line west to the Gilbert River, by that river upwards to the north-east corner of Green Hills No. 11 Run; again on the south by the north boundary of that run and a line west about 11 miles; on the west by a line north 10 miles; again on the north by a line east to the Gilbert River, and by that river downwards northerly to the point of commencement.

MINERAL STATISTICS: *Included in* "Other Goldfields" *in tables and diagrams*, Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: Gold (alluvial), *see* 3213, 3214, (nugget) 3438, (reef) 3744, 3745; Zircon, 8218.

WARDEN: Stationed at Georgetown.

INSPECTOR OF MINES: Stationed at Croydon.

GEOLOGICAL NOTE: This field has not been geologically examined. No reports have been issued concerning its features.

Greenhill Outcrops Lode. *See* MacFadzen's M.F. 1749.

Green's Cr., trib. of Will's R., Cloncurry. *Min.Ref.* Chrysocolla, *see* 1523; Copper Pyrites, 2204-2207; Covelline, 2375; Iron Pyrites, 5131; Malachite, 6265.

—— Gully, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

—— Specimen Reef, Upper Cape Diggings, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4062.

—— Well, Tannymorel Rail. Stn. (Killarney line). *Min.Ref.* Coal, *see* 1635.

Greenbank, Rosslyn Run, W. of Mt. Perry. *Min.Ref.* Graphite, *see* 4588.

Greendale Bore. *See under* Artesian Bores. No. 280.

—— Well, Eaglefield Cr., Isaac R. *Min.Ref.* Coal, *see* 1658.

—— —— (25 miles S. of), Isaac R. *Min.Ref.* Coal, *see* 1683.

Greenmount Bores. *See under* Artesian Bores. No. 282.

Greenockite. *Syn.*, Cadmium Blende, *which see.*

Greenup's, Severn R., Stanthorpe. *Min.Ref.* Molybdenite, *see* 6852; Molybdite, 6873.

Greenvale, Mt. Morgan (Crocodile) Goldfield. *Min.Ref.* Gold, *see* 4364.

Gregory (Sir A. C.), late Geologist of Southern Queensland.

REPORTS:—

(1) On the Mineral Discoveries on the Head of the Severn River and its Tributaries. Parl. Paper, 1872, p. 2.

(2) On the Geology of Part of the District of Wide Bay and Burnett. Parl. Paper, 1875, p. 6.

(3) On Coal Deposits of the West Moreton and Darling Downs Districts. Parl. Paper, 1876, p. 8.

(4) On the Burrum Coal Mines. Parl. Paper, 1879, p. 2.

(5) On the Geological Features of the South-eastern District of the Colony of Queensland. Parl. Paper, 1879, p. 11.

(6) On the Search for Coal between Dalby and Roma. Parl. Paper, 1879, p. 2.

(7) Occurrence of Gold at Mt. Morgan. Proc. Roy. Soc. Q., vol. 1, pt. 2, 1884 (1885), pp. 141-3.

(8) Geology of North Australia. Proc. Phill. Soc., vol. 1, 1859-1872.

Gregory Co. *See* Burke Dist. *See map*, Pl. 20.

—— Downs Stn. S.W. of Burketown. *Lat.*, 18° 29′; *Long.*, 139° 51′. *Min.Ref.* Galena, *see* 2688.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 283.

Gregory North District. (*See maps*, Pls. 20 and 21)—

SITUATION, ETC.: (*Lat.*, 21° and 25°; *Long.*, 138° and 144°.) Central Western Queensland. Bounded on the north by the District of Burke, on the east by Mitchell, on the south by Gregory South, and on the west by South Australia (*Long.*, 138°). Principal rivers and tributaries in the district are—Mulligan, Eyre Cr. (tribs. Hamilton, Burke, and Georgina), and Diamantina.

AREA: 84,791 sq. miles.

PRINCIPAL MINING CENTRES: *Mineral Fields*—Cloncurry (*in part*), Opalton (*in part*), and Windsor (Kynuna), *which see.*

COUNTIES:

Amaroo Co.

Ayrshire Co., Opalton Mineral Field (*in part—see also* Binburie Co., Brighton Co., Elderslie Co., Farrar Co., Mayne Co., Mowarra Co., Rosebrook Co., Woodstock Co.) *see also under* Mitchell District.

Binburie Co., Opalton Mineral Field (*in part—see also* Ayrshire Co.).

Brighton Co., Opalton Mineral Field (*in part—see also* Ayrshire Co.). Windsor Mineral Field (*in part—see also* Kynuna Co., Woodstock Co., Workingham Co.).

Buckingham Co.; Carrandotta Co.

Chatsworth Co., Cloncurry Mineral Field (*in part—see also* Merlin Co.). Burke R., Duchess Group, Ivanhoe Group, Mt. Birnie Group, Pilgrim Group, Trikelana Group (Copper). Wills R., Lady Fanny Group, Mt. Hope Group. *See also under* Burke Dist.

Currawilli Co; Diamantina Co.

Elderslie Co., Opalton Mineral Field (*in part—see also* Ayrshire Co.).

Euringe Co.; Eyre Co.

Farrar Co., Opalton Mineral Field (*in part—see also* Ayrshire Co.). Connemarro.

Georgina Co.; Glengyle Co.; Hamilton Co.

Kynuna Co., Windsor Mineral Field (*in part—see also* Brighton Co.). Kynuna Field (Opal).

Malwa Co.; Manuka Co.

Mayne Co., Opalton Mineral Field (*in part—see also* Ayrshire Co.). Horse Cr. Field (Opal).

Merlin Co., Agate Downs Goldfield (*in part—see also under* Selwyn Co., Burke Dist.). Cloncurry Mineral Field (*in part—see also* Chatsworth Co.). Horse Cr. Group (Copper). Maggie's Ct.-Agate Downs Group, Mt. Elliott Group (Copper). *See also under* Burke Dist.

Monkira Co.

Mowarra Co., Opalton Mineral Field (*in part—see also* Ayrshire Co. *See also under* Mitchell Dist.).

Nyama Co.; Oondooroo Co.; Piturie Co.

Rosebrook Co., Opalton Mineral Field (*in part—see also* Ayrshire Co.).

Sandringham Co.; Sturt Co.; Toko Co.; Warburton Co.; Waverley Co.; Wills Co.; Windsor Co.

Workingham Co., Windsor Mineral Field (*in part—see also* Brighton Co.).

Woodstock Co., Opalton Mineral Field (*in part—see also* Ayrshire Co.). Windsor Mineral Field (*in part—see also* Brighton Co.).

MINERAL REFERENCES AND STATISTICS: *See under* names of Principal Mining Centres.

Gregory South District. *See maps,* Pls. 18 and 19.

SITUATION, ETC.: *Lat.*, 25° and 29°; *Long.*, 138° and 144°. Bounded on the north by the Districts of Gregory North and Mitchell, on the east by the District of Warrego, on the south by N.S. Wales (*Lat.*, 29°), on the west by South Australia (*Long.*, 141°; *Lat.*, 26°; *Long.*, 138°). Principal rivers—Mulligan or Eyre Cr., Diamantina, Cooper's Cr. (trib. of Wilson R.).

AREA: 49,403 sq. miles.

PRINCIPAL MINING CENTRES: No proclaimed mineral field. Contains the Bull's Cr., Kyabra, and Eromanga Group of Opal Fields, *which see.*

COUNTIES:

Abbotsford Co.

Bulgroo Co., Bull's Cr. Field (Opal); Marble Arch Mine (Opal); Valdare Mines (Opal).

Burarie Co., Noccundra.

Cameron Co.; Carruthers Co.; Conbar Co.; Cooper Co., Oontoo; Curralle Co.

Daroo Co., Betoota; Durham Co.; Durrie Co.

Gordon Co., Eromanga, Erounghoola Run, Quart Pot Cr. Mines (Opal.).

Grey Co.; Haddon Co.

Kyabra Co., Keeroongooloo Run. Opal Mines—Aladdin, Breakfast Cr., Bung Bung, Exhibition, Friday, Gem, Gladstone, Hammond, Hansington, Malone's Mascotte, Mat's Hard, Peppler and Webber's, Scotchman, Stanley's, Kyabra, and Stony Cr.

Pender Co.; Rosebery Co., Birdsville; Tanbar Co.; Thunda Co.; Weramo Co.; Weringa Co.

Wilson Co.

Windula Co., Erounghoola Run. Kyabra Opal Field. Opal Mines—Cunnavalla, Little Wonder, Mulcahy's, Pinnacles, and Yellow Nett. *See also maps,* Pls. 18, 19.

Gregory River, S.E. of Bowen. *Min.Ref.* Garnet, *see* 3125; Limestone, 653.

—— —— (on hill, 2 miles from the), nr. Burketown. *Min.Ref.* Hematite, *see* 4680.

Gregory River. Heads at Main Coast Range 40 miles N.W.byW. of Maryborough, and flows N., then S.S.E. into Burrum R. 30 miles N.N.W. of Maryborough. Length, about 50 miles. *Min.Ref.* Coal, *see* 1812.

GEOLOGICAL NOTE: The rocks in the Gregory basin consist of sandstones and shales, with thin seams of coal, belonging to the Burrum Formation (Trias-Jura). *See* G.S.Q. Pub. No. 217 (map).

Grevillia Cr., 8 miles S.S.W. of Benaraby Rail. Stn. (North Coast line). *Min.Ref.* Biotite, *see* 309; Felspar, 2646.

Grey Copper Ores. *See* Bournonite, Redruthite, Tetrahedrite.

—— Co. Gregory South Dist. *See map,* Pl. 18.

—— Cr., br. of Burdekin R. Head at Main Dividing Range, and flows N.E. into Burdekin R. Length, about 35 miles. *Min.Ref.* Antimony, *see* 74.

—— Dawn, Cordalba, N.W. of Maryborough. *Min.Ref.* Mispickel, *see* 6806; Scorodite, 7377.

—— Ranges, border of N.S.W., S. Western Queensland. *Min.Ref.* Garnet, *see* 3120, 3155A; Hornblende, 4848; Staurolite, 7601.

Greyrock Sub-artesian Bore. *See under* Artesian Bores. No. 141.

Greysteel Sub-artesian Bore. *See under* Artesian Bores. No. 264.

Grick's Reef, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 4163.

Griffith Co. Kennedy North Dist. *See map,* Pl. 16.

—— Bore. *See under* Artesian Bores. No. 39.

—— Copper Mine, 2 miles S.E. of Mungana Rail. Stn. (Chillagoe line). *Min.Ref.* Azurite, *see* 194A; Copper (native), 1992; Cuprite, 2439; Hematite, 4717; Malachite, 6237; Manganese-dioxide, 6410; Pyrolusite, 7118; Selenite, 4639; Tetrahedrite, 7765.

—— and Black's Lease, Grass-tree Goldfield. *Min.Ref.* Gold, *see* 4113.

—— Reef, N. side of Diggers' Cr., Barmundoo Goldfield. *Min.Ref.* Galena, *see* 3037; Gold, 4235-4336; Iron Pyrites, 5356; Mispickel, 6783; Zinc Blende, 8181.

Griffdale Artesian Bore. *See under* Artesian Bores. No. 295.

Grimes's Paddock, ½-mile W. of Rocklea Rail. Stn. (South Coast line). *Min.Ref.* Gold (alluvial), *see* 3369.

Grindstones. Sandstones suitable for grinding purposes are common in many localities, more particularly in the Ipswich and Burrum Coal Measures. On these fields fine-bedded sandstones occur, equal in abrading properties to any of the material obtained outside the State, and works have recently been established near Helidon to manufacture grindstones by machinery from the sandstone in the vicinity.

Grosvenor Co. Leichhardt Dist. *See map,* Pl. 10.

—— Downs, 60 miles N.N.E. of Clermont. *Min.Ref.* Opal (common), *see* 6982A.

Grotty's (Thos.) Bore. *See under* Artesian Bores. No. 288.

Guano. *Compo.,* a bone phosphate of lime, etc. *Uses. See* notes *under* Calcium.

4612. ——. Olsen's and Johannsen's Caves, nr. Mt. Etna, 15 miles N.byW. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 86, p. 3 (1892).

Analyses—

	(1.)	(2.)	(3.)	(4.)	(5.)
Moisture	12·20	15·45	16·90	11·35	18·25
Volatile Matter	18·30	17·15	16·85	20·20	23·75
Phosphates	35·40	42·00	34·40	32·95	27·85
Lime	6·94	4·81	8·11	5·45	6·10
Sulphuric Acid	6·66	5·50	5·44	11·22	9·04
Alkalies	2·50	3·09	5·12	5·33	3·51
Sand	18·00	12·00	13·18	13·50	11·50
	100·00	100·00	100·00	100·00	100·00
Ammonia	Trace	Trace	Trace	Trace	Trace

See Ref. above for other Analyses.

Guest's Sel., Mountain Camp, Enoggera Goldfield. *Min.Ref.* Gold, *see* 4213.

Guiding Star Reef, Thane's Cr. Goldfield. *Min.Ref.* Gold, *see* 3866; Iron Pyrites, 5128.

Guilford Bore. *See under* Artesian Bores. No. 192.

Gulewa Cr., St. Aignan (Misima) Is., Brit. New Guinea. *Min.Ref.* Calcite, (stalactitic), *see* 610; Limestone, 713.

Gully, nr. Tyrell's Shaft, Welcome Cr., Cooktown Railway. *Min.Ref.* Coal, *see* 1610.

Gum Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 227.

—— Tree Flat, Talgai Goldfield. *Min.Ref.* Gold (alluvial), *see* 3253, (nugget) 3440, (reef) 3852.

Gum-mining. *See* note *under* Fossil Resin.

Gumbardo Goldfield. *See* Moondilla Goldfield.

Gummo's Reefing Mine, Horn Is. Goldfield. *Min.Ref.* Iron Pyrites, *see* 5093; Mispickel, 6707; Scorodite, 7369.

Gumonina Cr., St. Aignan's Is., Brit. New Guinea. *Min.Ref.* Gold (alluvial), *see* 3427; Limestone (coralline), 731.

Gunalda (Rail. Stn.), (North Coast line), 18 miles N.N.W. of Gympie. *Co.* March; *Dist.* Wide Bay. Railway Base for coal mines in the vicinity. *Min.Ref.* Coal, *see* 1822, 1822A, 1823.

Geological Note: The rocks in this locality are sandstones and shales belonging to the Burrum Coal Measures (Trias-Jura), and contain workable seams of coal although somewhat disturbed by dyke intrusions.

—— Run, nr. Gunalda Rail. Stn. *Min.Ref.* Coal, *see* 1823.

Gunbarrel Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 171.

Gundiah (Rail. Stn.), (North Coast line), 30 miles N.byW. of Gympie. *Co.* March; *Dist.* Wide Bay. Railway Base for coal mines at Tannyalba Cr. *Min.Ref.* Coal, *see* 1820, 1821. *See also under* Gov. Min. Jour., Report No. 75.

Gunnawarra Co. Kennedy North Dist. *See map,* Pl. 16.

Gunn's Bore. *See under* Artesian Bores. No. 202.

Gunpowder Cr. Heads at Leader Range 75 miles W.N.W. of Cloncurry, and flows N.N.E. into Leichhardt R. 105 miles S.S.E. of Burketown. Length, about 100 miles. About *Lat.* 19° 24′ S.; *Long.* 139° 36′ E. *Min.Ref.* Gold (alluvial), *see* 3187; Limestone, 621.

—— —— Mining Centre, 90 miles N.W.byW. of Cloncurry. *Includes* Calton Hills, Big Ben, and Eastern Cr. Group of Copper Mines. *Min.Ref.* Malachite, *see* 6162.

Guppy's Tableland, N. of Cooktown. *Min.Ref.* Coal, *see* 1605.

Gurrumba, 12 miles S.E. of Petford Rail. Stn. (Chillagoe line). *Min.Ref.* Cassiterite, *see* 952B, 953; Hematite, 4714A; Wolfram, 7967.

Gydha Bore. *See under* Artesian Bores. No. 432.

Gympie Antimony Mines, nr. Sel. (3482), Chatsworth Scrub, N.W. of Gympie. *Min.Ref.* Cervantite, *see* 1311; Gold (traces), 4547; Stibnite, 7657.

—— Cr., Gympie Goldfield. *Min.Ref.* Gold (nugget), *see* 3449.

—— Copper Mine, Gooroomjam Cr. *See under* Scrub Paddock Diggings.

—— Copper Co., Ltd., M.L. (25), Gooroomjam Cr. *Min.Ref.* Copper Pyrites,

—— Copper Co., Ltd., M.L. (25), Gooroomjam Cr. *Min.Ref.* Copper Pyrites, *see* 2138; Iron Pyrites, 5009; Magnetite, 5983.

Gympie Goldfield—

Situation: *See maps,* Pls. 4, 5, 27. The city of Gympie is 106 miles (by rail) N.byW. of Brisbane, on North Coast Line. *Cos.* Lennox and March; *Dist.* Wide Bay. Centre about *Lat.* 26° 11′ S., *Long.* 152° 30′ E.

Discovery: Alluvial gold was discovered near the site of the Town Hall by Nash in September, 1867, and was first reported on the 17th October of the same year. In November, 1867, the first reef was found in Sailor's Gully, and named the "Lady Mary." Gympie was known as the Currie Diggings when the gold was first found. Platinum was discovered in the alluvial gold workings in Brickfield Gully in 1869.

Railway Base for Yabba and Glastonbury Goldfields, and Neardie Antimony Mines.

Population: 16,171 (Census, 1911).

Rainfall: Yearly average, 1902 to 1907, 43·13 inches. Wet days, 99,

Proclamation of Field: First gazetted, 10th October, 1867; last, 16th July, 1877, as follows:—Commencing at the junction of Glastonbury Creek with the Mary River and bounded on the north-west by a line bearing north 45 degrees east to the Maryborough and Gympie Road; thence by that road north-west by about 255 chains in a direct line to the divisional boundary on Curra Run; thence by that boundary bearing north 26 degrees east about 270 chains to the police boundary; thence on the north by that boundary east 360 chains; thence on the east and north-east by a line bearing south 113 chains; thence by a line bearing south 45 degrees west to watershed of the Mary River; thence by that watershed south-east about 9½ miles in a direct line; thence on the south-east and

Gympie Goldfield—*continued:*

south by a line bearing south 45 degrees west to the Mary River at the 26-mile tree about half a mile below the junction of the 6-Mile Creek; thence by the Mary River upwards to its junction with the 4-Mile Creek; thence on the south by a line bearing west to the watershed separating Pie Creek and the Mary River; and on the south-west by the said watershed north to the junction of Pie Creek with the Mary River; and thence by that river to the point of commencement.

Area: 76,800 acres (120 sq. miles).

Leases: Gold-mining Leases and Applications, 78; area, 1,705 acres. Mineral Leases, 2; area, 28 acres. Miners' Homesteads, 2,698; area, 37,016 acres (1912). For plans of leases in various years *see* list in Annual Reports *under* Dept. of Mines.

Mineral Statistics:

Gold, *see tables and diagrams*, Pls. 36, 46, 46A, 47.
Silver, ,, — Pls. 37, 46, 46A.
Manganese, ,, — Pls. 40, 46, 46A.

Gold, Average Values: Alluvial, Quartz, Cyanide, etc. *See under* Gold.

Statistical Note: Greatest recorded annual gold yield (1903), 147,622 fine oz.; value, £627,058. Smallest recorded annual gold yield (1879), 31,684 fine oz.; value, £134,585. The first annual yield of gold recorded (1878) amounted to 34,248 oz. From 1881 to 1901 the yields of gold fluctuated between 50,000 and 90,000 oz. In 1903 the yield increased to 120,000 oz., and the three years following averaged nearly 117,322 oz. The subsequent six years' yield fell off considerably, and in 1912 the yield was only 39,508 oz. Total yield of gold to end of year 1912 is 2,653,293 fine oz.; value, £11,270,466, equal to 14·98 per cent. of the whole gold production of the State.

Mineral References: **Gold** (alluvial), *see* 3412-3419, (nugget) 3449-3450A, (reef) 4421-4541; Platinum, 7074, 7074A; Silver (Hessite), 4816-4818, (Silver) 7543, 7544; Telluride Ore, 7704, 7705; Lead (Altaite), 3, 3A, (Galena) 3080-3088; Copper (native), 2015; Antimony (Stibnite), 7658, 7659; Molybdenite, 6867; Zinc Blende, 8214, 8215; Manganese (dioxide), 6493-6495A, (Psilomelane) 7105, 7106, (Pyrolusite) 7134, (Rhodenite) 7323A; Cobalt (Asbolane), 124; Arsenic (native), 101-103; Iron (Iron Pyrites), 5457-5467, (Ironstone) 5634, (Mispickel) 6812, (Pyrrhotite) 7165; Coal, 1824; Graphite, 4607-4609. Other Minerals: Actinolite, 4871; Asbestos, 114A; Augite, 143; Calcite, 559; Chlorite, 1469; Felspar, 2649; Hornblende, 4849, 4872A; Jasper, 5649; Magnesite, 5964A.

Geological Note: The rocks in and around Gympie consist of Permo-Carboniferous slates, shales, sandstones, limestones, conglomerates, and tuffs, with inter-bedded and intrusive volcanic rocks. Three defined slate beds are known as the 1st, 2nd, and 3rd series respectively. Between the 1st and 2nd there is a "Greywacke" series, between the 2nd and 3rd "Greenstone," below the 3rd "Diabase" and below this an inconformable series of altered shales, sandstones, conglomerates, etc. On the First Bed there rests a "Conglomerate" series with "Plumbago" bands, and above this, in ascending order, limestones and shales. Gold-bearing reefs traverse the country, but, as a rule, are only productive where they are in contact with slate carrying graphite or anthracite. Marine fossils occur in most of the strata.

Geological Publications: Reports—Nos. 52, 76, 100, 156, 166, 175. *Maps* No. 139. *See under* Geol. Sur. Pub. List for titles. *See also under* Q.G.M.J., Reports Nos. 42, 54. *See also* list of maps *under* Department of Mines Publications. *See also* Supplementary Report List, Nos. 5, 37, 86, 124, 130, 134.

Warden and Inspector of Mines: Both stationed at Gympie.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Drainage Board: Constituted to make proper provision for the drainage of the deep ground, and for the prevention of the flooding of mines by surface water. The Drainage Board report (1895) contains drawings of the dams which have been constructed underground to prevent the flooding of the workings of the whole of the Gympie deep mines in the event of an abnormal rise of the Mary River.

Gympie Goldfield—*continued*:

Drainage Board Areas.—List of mines within the Drainage Board Areas, 23rd February, 1912 (under the prov. of the Mining Act of 1898):—

Northern Drainage Area—

1395—Alliance and Sunburst
893—Australasian
1245—Black's New Zealand
1417—Black's United
1490—Black's United
1292—Block
1480—Bonney, F.C.
1507—Brown, William
1092—Columbia Consolidated
1093—Columbia Consolidated
1106—Columbia Extended
1107—Columbia Extended
1393—Columbia, 3 N.
845—Columbia Smithfield (in part)
1358—Columbia Smithfield
897—Columbia and Smithfield, 1 N.
993—Columbia and Smithfield, 2 N.
1496—Great Northern
1401—Great Northern, 1 N.
1388—Great Western
1486—Jackson, J.
860—Lady Mary, 7 South
1230—Lady Mary, 7 S.
1321—Lady Mary, 7 S.
1364—Lady Mary, 7 S.
1457—Lady Mary, 7 S.
1384—Laing Syndicate
1470—Lewis, A. A.
1047—March and Crown Extended
— —Moodie, D.C.
1481—O'Regan, B.F.
829—Phœnix
834—Phœnix, 1 N.
799—Phœnix, 3 N.
713—Phœnix, 4 N.
1495—Phœnix, 5 N.
817—Phœnix Golden Pile
1055—Phœnix Golden Pile
1462—Smithfield
626—Smithfield North
707—Smithfield, 1 N.
885—Smithfield and Phœnix G.P.
1482 Sym, T. H.
1503—Victory
895—Victory, 1 N.
1461—Victory, 1 N.

Southern Drainage Area—

1459—Barns, A. J.
1467—Barns, J. A.
845—Columbia Smithfield (in part)
579—Glanmire North
1315—Glanmire, 1 N.
1287—Glanmire, 3 and 4 N.
833—Glanmire and Monkland S.
1365—Great Eastern
872—Great Eastern, 1 N.
647—Great Eastern, 1 S.
721—Great Eastern, 2 S.
1347—Great Eastern, 2 S.
1348—Great Eastern, 2 S.
1242—Great Eastern and Orient
1469—Griffiths, W. T.
1367—Monkland 7 and 8 United
1441—Monkland 7 and 8 United
1377—McLeod's New Wilmot
327—Nicholls Lease
206—Oriental Consols
1218—Oriental Consols
1363—Oriental Consols
1463—Oriental Extended
1000—Oriental and Glanmire
1066—Oriental and Glanmire North
1109—Oriental and Glanmire, 1 N.
1412—Oriental and Glanmire, 1 N.
1049—Oriental and Glanmire, 2 N.
1468—Oriental and Glanmire, 2 N.
1027—Oriental and Glanmire, 1 S.
1122—Oriental and Glanmire, E.
1123—Oriental and Glanmire, E.
1247—Phœnix, 2 S.
1257—Phœnix, 2 S.
1033—Scottish Gympie Gold Mines
1225—Scottish Gympie Gold Mines
1327—Scottish Gympie Gold Mines
1328—Scottish Gympie Gold Mines
873—Smithfield, 2 and 3 S.
876—Smithfield, 2 and 3 S.
1485—Webb, A. E.
1378—Wilmot Extended
1456—Wilmot Extended

Gympie Stock Exchange: Sec., Jas. MacDonnell

Gympie Chamber of Commerce and Mines: Sec., P. King.

Gympie Technical College: For mining subjects taught *see under* "Technical Colleges."

Crushing Mills: Fifteen batteries (507 stamps), including some on the outfields. Several idle. Charges, 7s. to 8s. per ton.

General Information: Consult *Pugh's Almanac*, *Queensland Post Office Directory*, *Post and Telegraph Guide*. Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Local Newspapers: *Gympie Times* and *Gympie Truth*. (*Gympie Miner* has stopped publication, but its files contain much useful data about mining matters.)

Gympie G.F. Bores. Ashton's; No. 1 and No. 2; Monkland; and West of Scotland. *See under* Gold Bores.

—— Golden Crown Gold Mine, Gympie Goldfield. *Min.Ref.* Gold, *see* 4449.

—— Mine, Horn Island Goldfield. *Min.Ref.* Gold, *see* 3810; Iron Pyrites, 5094.

—— Road, Caboolture. *Min.Ref.* Beryl, *see* 296.

—— ——. Nr. North Pine Rail. Stn. *Min.Ref.* Kaolin, *see* 5697a.

Gypsey Plains Sub-artesian Bore. *See under* Artesian Bores. No. 269.

Gypsum. *Compo.*, Hyd. sulphate of lime. *Colour*, usually white or colourless. *H.* = 1·5-2. *Sp.gr.* 2·3. *Vars.*, Alabaster (fine-grained and compact), Satin spar (fibrous), Selenite (pearly and crystallised). *Contents* (*max.*), Lime 32 per cent.

GEOLOGICAL NOTE: Bedded deposits of Gypsum occur in Western Queensland in rocks belonging to the Cretaceous System. They are more or less impure and of very limited extent, and are frequently associated with Opal. Other gypsum deposits in the State are usually in the form of veins, one of which, at Mt. Elliott, in the Cloncurry District, has yielded beautifully clear crystals of selenite varying up to six inches in diameter and several feet long.

USES: *See* note under Calcium.

4613. ——. *Assoc.with* Epsomite, in decomposed slate. *Loc.* Gaeta Goldfield, 30 miles N. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* O.R.

4614. ——. As twinned crystals, in alluvial deposits. *Loc.* Cabbage-tree, 40 miles S.W. of Miriam Vale Rail. Stn. (North Coast line), 83 miles (by rail and road) S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. *Ref.* L.C.B.

4615. ——. Koorboora Well, Koorboora Rail. Stn. (Chillagoe line), 108 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.**

4616. ——. Winton, 132 miles (by rail) S.S.W. of Hughenden, 368 miles (by rail) S.W.byS. of Townsville (Great Northern line). *Co.* Ayrshire; *Dist.* **Gregory North.** *Ref.* Q.M.

4616A.—— ("Workable thickness, great purity"). *Loc.* Chollarton, nr. Collingwood, about 32 miles W. of Winton Rail. Stn. (Gt. Northern line), 368 miles (by rail) S.W. of Townsville. *Co.* Ayrshire (*ante*). *Ref.* G.S.Q. Pub. 92, p. 401.

4617. ——. In large quantities. *Loc.* Carbine Cr., br. of Diamantina R., 106 miles W.N.W. of Windorah. *Co.* Currawilla; *Dist.* Gregory North. *Ref.* B.D.

4618. ——. *Assoc.with* Opal, in ferruginous rock. *Loc.* Opalton Mineral Field, 60 miles S.S.W. of Winton Rail. Stn. *Co.* Fermoy; *Dist.* Gregory North. *Ref.* G.S.M.

4619. ——. In sandstone. Richmond Downs, 69 miles W.byN. of Hughenden Rail. Stn. (Northern line). *Co.* Rupert; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 10, p. 2 (1885).

4620. ——. *Assoc.with* Gold, Iron Pyrites, Calcite, and Chalcedony, in quartz. *Loc.* North Australian Reef, Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, pp. 36, 72 (1887).

4621. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Zinc Blende, Calcite, and Chlorite, in quartz. *Loc.* Queen Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 26 (1879); P.R.S.Q., vol. 4, pp. 36, 47 (1887); G.S.M., and W.C.T.

4622. ——. Top of Tableland, near Houghton Valley, 49 miles (by rail) S. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 2, p. 34 (1879).

4623. ——. In quantities. *Loc.* Rosebrook Station, Mayne R., trib. of Diamantina R., 117 miles W. of Longreach Rail. Stn. (Central line). *Co.* Rosebrook; *Dist.* Kennedy North. *Ref.* B.D.

4624. ——. *Assoc.with* Chrysocolla, Pyrolusite, Galena, Cerussite, and Calcite, in garnet rock. *Loc.* Mt. Moss S. Lease (168), (Elsie Shaft), Kangaroo Hills Mineral Fields. *Co.* Wairuna; *Dist.* Kennedy North.

4625. ——. *Assoc.with* Copper carbonate. *Loc.* Jack's Cr., Bowen R., 55 miles S.byW. of Bowen. *Co.* Drake; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 4, p. 24 (1879).

4626. ——. *Assoc.with* Copper carbonate. *Loc.* Low Ridge, E. of Jack's Cr. (*ante*). *Ref.* G.S.Q. Pub. 4, p. 24 (1879).

4627. ——. As twin-crystals, at contact of granite and sedimentary rock. *Loc.* near Sunbeam Mine, Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South (*ante*). *Ref.* G.S.M.

4628. ——. As penetration-twin crystals. Isabella Claim, Mt. Wyatt Goldfield, 60 miles S.S.E. of Ravenswood. *Co.* Sellheim (*ante*). *Ref.* G.S.M.

4629. ——. In patches in coal measures. *Loc.* near Balmoral Brick Works, Bulimba Cr., 7 miles E.byN. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* B.D.

4630. ——. Redbank, Woogaroo Cr., 17 miles (by rail) S.W.byS. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.M.

4631. Gypsum (pink). Calliope River, 10 to 24 miles S.W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.M.

4632. ——. Half a mile W.N.W. of Glenbar Head Stn., 20 miles W. of Tiaro Rail. Stn. (North Coast line). *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

4633. ——. **Alabaster** (*var.*). Winton, 132 miles S.S.W. of Hughenden Rail. Stn., and 368 miles (by rail) S.W.byS. of Townsville (Great Northern line). *Co.* Ayrshire; *Dist.* Gregory North. *Ref.* Q.M.

4634. —— ——. Calliope R., from 10 to 24 miles S.W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* Q.M.

4635. ——. **Satin Spar** (*var.*). Mt. Gregory, nr. Clermont. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.M.

4636. —— ——. In sandstone caves. "Amphytheatre" at Glen Houghton, Upper Dawson River, 35 miles N.W. of Taroom. *Co.* Labouchere; *Dist.* Leichhardt. *Ref.* B.D.

4637. —— ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Hematite, Magnetite, Limonite, Göthite, and Pyrolusite, in vesicular quartz, quartzite, and kaolin. *Loc.* Mt. Morgan Mine, Mt. Morgan Goldfield, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 17 (1884), 47 (1888), 83 (1892), and 132 (1898).

4638. ——. **Selenite** (*var.*) Hughenden, 236 miles (by rail) S.W.byS. of Townsville. *Co.* Douglas; *Dist.* Burke. *Ref.* G.S.M.

4638A. —— ——. *Assoc.with* Gold, Native Copper, Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptose, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Calcite, and Chlorite, in quartz, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 219, 224 (1908).

4639. —— ——. *Assoc.with* Native Copper, Cuprite, Tetrahedrite, Malachite, Azurite, Manganese-dioxide, and Hematite. *Loc.* Griffith Mine, Julia Cr., 2 miles S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* G.S.Q. Pubs. 69, p. 5 (1891), 134, p. 11 (1898), and G.S.M.

4640. —— ——. *Assoc.with* Iron Pyrites, in shale. *Loc.* Silver Spur Mine, near Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 150, p. 14 (1900).

4641. —— ——. Winton, 132 mles (by rail) S.S.W. of Hughenden, 368 miles (by rail) S.W.byS. of Townsville (Great Northern line). *Co.* Ayrshire; *Dist.* **Gregory North.** *Ref.* Q.M.

4642. —— ——. As large clear crystals, sometimes several feet long and several inches thick. *Assoc.with* Native Copper and Copper Pyrites, in vughs. *Loc.* Mt. Elliott Copper R.C. (No. 3, etc.), Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.M.

4643. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Old Warrior Reef, Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

4644. —— ——. *Assoc.with* Copper carbonate. *Loc.* Manchester Reef, Marengo Goldfield, 30 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

4645. —— ——. Peak Downs (Clermont) Goldfield, 229 miles (by rail) W.byN. of Rockhampton (Central line). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.M.

4646. —— ——. In excavation at gasworks. *Loc.* Bulimba Road, Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* Q.M.

4647. —— ——. *Assoc.with* Copper Pyrites, Iron Pyrites, in veins. *Loc.* Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* **Port Curtis.** *Ref.* B.D.

4648. —— ——. Bingera, 52 miles E. of Thargomindah, 59 miles W. of Cunnamulla Rail. Stn. *Co.* Wellington; *Dist.* **Warrego.** *Ref.* B.D.

Gypsy King Tin Mine, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1153A.

—— Reef, left-hand br. of Palmer R., Palmer Goldfield. *Min.Ref.* Gold, *see* 3683A.

Haddon (Ten Mile) Bore. *See under* Artesian Bores. No. 363.

—— Co. Gregory South Dist. *See map*, Pl. 18.

Haddon's Bore. *See under* Artesian Bores. No. 229.

Hadleigh Castle Mine, Rochford, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4034.

—— —— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1091.

Hæmatite. *Syn.* Hematite, *which see.*

Half-moon Sub-artesian Bore. *See under* Artesian Bores. No. 154.

Haighmoor Colliery, North Ipswich Coal Area. Mining operations commenced here in 1865. *Min.Ref.* Coal, *see* 1740.

Hail Cr., trib. of Bee Cr., W.byS. of Mackay. About *Lat.* 21° 26′ S.; *Long.* 140° 27′ E. *Min.Ref.* Coal, *see* 1701.

—— and Cooper's Creeks (flat between), 60 miles S.byW. of Mackay. *Min.Ref.* Opal (wood), *see* 7009.

Halifax Bay, 36 miles N.W. of Townsville. About *Lat.* 18° 55′ S.; *Long.* 146° 30′ E. *Min.Ref.* Bismuth (ore), *see* 355; Bismutite, 405; Molybdenite, 6859.

Halite. *Syn.* Rock salt, common salt. *Compo.*, Chloride of sodium. *Colour*, white, reddish, colourless. *Taste*, saline. *H.* = 2·5. *Sp.gr.* = 2·1-2·2. *See* notes under Salt Manufacture.

USES: *See* note under Sodium.

4649. ——. As surface deposits. Albert River, Burketown, Gulf of Carpentaria. *Co.* Porchester; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 180, p. 13 (1902).

4650. ——. As incrustations on decomposed intrusive dyke rock. *Loc.* Roger's No. 1 and other mines on the Golden Gate line of Reef, 4 miles N.W. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* B.D.

4651. ——. As an incrustation. Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* **Burnett.** *Ref.* B.D.

4652. ——. Upper Burnett, about 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 55 (1887).

4653. ——. Impregnating kaolin. *Loc.* Cork Stn., Diamantina R., 80 miles S.W. of Winton. *Co.* Rosebrook; *Dist.* **Gregory North.** *Ref.* G.S.M.

4654. ——. In cubical crystals. *Loc.* Herbert R., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* Q.M.

4655. ——. In mineral water. Nettle or Innot Hot Springs, 8 miles E.byN. of Mt. Garnet Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 60 (1900).

4656. ——. Sylvester Creek, trib. of Herbert R., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 55 (1887).

4657. ——. In sandstone. Bohle R., 7 miles W. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 55 (1887).

4657A. ——. Lake Buchanan, about 80 miles S.S.E. of Pentland Rail. Stn. (Northern Rail. line). *Co.* Albany; *Dist.* **Kennedy South.** *Ref.* G.S.M.

4657B. ——. Lake Galilee, 50 miles N.E. of Aramac. *Co.* Gayundah. *Dist.* Mitchell.

4657C. ——. Lake west of Lake Philippi, near Western border of the State. *Lat.*, 24° 15′. *Co.* Eyre; *Dist.* Gregory North.

4657D. ——. Lake near Lake Muncoonie, near Western border of the State. *Lat.*, 25° 10′. *Co.* Weramo; *Dist.* Gregory South.

4658. ——. In vesicular basalt. *Loc.* Bundamba, 21 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* P.R.S.Q., vol. 4, p. 55 (1887).

4659. ——. *Assoc.with* Atacamite, in friable sandstone. *Loc.* Moonmera Copper Mines, near Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 195, p. 27 (1904).

Half-moon Sub-artesian Bore. *See under* Artesian Bores. No. 154.

Hall Sound (Delena), Brit. New Guinea. *Min.Ref.* Limestone (coralline), *see* 727.

Halliday's Reef, Canoona Goldfield. *Min.Ref.* Gold, *see* 4315A.; Iron Pyrites, 5398A.

Halloysite. *Compo.*, Hyd. silicate of alumina. *Colour*, usually whitish. *Lustre*, rather waxy. Translucent in water. *H.* = 1-2. *Sp.gr.* = 1·8-2·4

4660. ——. Nigger Cr., br. of Wild R., 3 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.M.

4661. —— (green), in basalt. Battery Well, Deep Ground, Black Ridge, 12¾ miles N.byW. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q., Pub. 201, p. 109 (1906).

4662. ——. In basalt. Junction of Dawson and Dee Rivers, 56 miles S.S.W. of Rockhampton. *Co.* Kimberley; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 21 (1901), and G.S.M.

4663. ——. Sherwood, 7 miles (by rail) S.byW. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* G.S.M.

4664. ——. Near Taringa Rail. Stn., 4 miles S.S.W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* Q.M.

Halpin's Camp, Irvinebank. *Min.Ref.* Cassiterite, *see* 864.

—— Cr., br. of California Cr. *Min.Ref.* Antimony, *see* 72; Cassiterite, 1080; Copper (ores), 2031; Silver, 7460.

Hambleton Plantation, 7 miles S.S.W. of Cairns. *Min.Ref.* Psilomelane, *see* 7085.

Hamburg Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4510.

Hamilton, nr. Brisbane. Post Tertiary Fossils. G.S.Q.P. 150, p. 15 (1899).

Hamilton Bore. *See under* Artesian Bores. No. 432.

—— (W.B.) Bore. *See under* Artesian Bores. No. 168.

—— Co. Gregory North Dist. *See map*, Pl. 20.

—— Downs Bores. *See under* Artesian Bores. No. 284.

—— Creek Group of Copper Mines, Cloncurry. *Includes* Manxman, Mt. Olive, Gipsy's Warning, May Queen M. Leases, and Yamamilla M. Freehold. *Min. Ref.* Copper carbonate, *see* 1870.

Hamilton Goldfield—

Situation : *See maps*, Pls. 8, 9. The township of Ebagoolah is about 33 miles (by road) W. of Port Stewart, and 173 miles N.W.byW. of Cooktown. *Co.* Coen; *Dist.* Cook. *Lat.*, 140° 5′; *Long.*, 143° 15′.

Discovery : Gold discovered by John Dickie at Ebagoolah, January, 1899.

Population : 101 (estimated, 1910).

Proclamation of Field : First gazetted, 2nd January, 1900; last alteration, 13th July, 1900, as follows, viz. :—The whole catchment area of the Lukin River from a gum-tree marked broad arrow over Y1 on the eastern boundary of Yarra No. 1 Block to the east.

Area : 528,640 acres (826 sq. miles).

Leases : Gold-mining Leases and Applications in force—4; area, 40 acres; 1912. Miners' Homesteads and Applications—42; area, 38 acres; 1912.

Principal Mining Centres : Yarraden, Ebagoolah, Potallah Cr., which also include Corbett's Gully, Dickie's P.C. Gully, Dick's Gully, Gold Mt. Gullies, Good Luck Gully, Hit-or-Miss Gully, Jackson's Gully, Looking Glass Hill, Nuggety Gully, Peterson's Gully, Queensland Gully, Ross's Well Gully, Slaughter-yard Gully, Steele's Gully, Tasmania Gully, and The 4-Mile.

Mineral Statistics : Gold, *see tables and diagram*, Pls. 36, 46-46A, 47.

Statistical Notes : Greatest recorded annual gold yield (1900), 8,300 fine oz.; value, £35,256. Smallest recorded annual gold yield (1901), 750 fine oz.; value, £3,186. Hamilton is one of the latest discovered goldfields, but the yields of gold have become less and less every year. The total yield to end of year 1912, 43,945 fine oz.; value, £186,667. This is equal to 0·25 per cent. of the whole gold production of the State.

Mineral References : Gold (alluvial), *see* 3210, 3211, (reef) 3700-3712; Lead (Galena), 2740-2741A, (Massicot) 6525; Iron (Hematite), 4705, (Ilmenite) 4891, (Iron Pyrites) 5030-5033, (Limonite) 5839, (Mispickel) 6679. Other Minerals—Hypersthene, 4878; Sillimanite, 7423; Talc, 7673.

Hamilton Goldfield—*continued:*

GEOLOGICAL NOTE: The prevailing rocks are schists and granites, the former probably being metamorphosed sedimentary rocks, the latter occurring as intrusive dykes. Diorite is also present in the vicinity. Quartz "blows" are common throughout the locality, but the gold-bearing quartz reefs are confined to a zone near the junction of the schists with the granites.

GEOLOGICAL PUBLICATIONS: Reports Nos. 163 (1901) and 209 (1907). *See under* Geol. Surv. Pub. List. for titles; *see also under* Govt. Mining Jour., Report No. 8.

WARDEN: Stationed at Cooktown. INSPECTOR OF MINES: Stationed at Croydon.

CRUSHING MILLS: Three Batteries (25 Stamps). Charges, 20s. per ton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

GENERAL INFORMATION: Consult *Pugh's Almanac; Queensland Post Office Directory; Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Hamilton King Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3703.

—— River, 144 miles S. of Cloncurry. *Min.Ref.* Opal (precious), *see* 6939.

GEOLOGICAL NOTE: The rocks consist of sandstone, etc., of Rolling Downs Formation (Lower Cretaceous), on which there rest outliers of Desert Sandstone (Upper Cretaceous). To the N.W. these formations overlie metamorphic rocks of Silurian Age. *See* G.S.Q. Pub. No. 159 for notes.

Hamlet Downs Bores. *See under* Artesian Bores. No. 285.

Hamly's Well Sub-artesian Bore. *See under* Artesian Bores. No. 288.

Hammond Island, Torres Straits. *Min.Ref.* Gold, *see* 3803; Iron Pyrites, 5087A.

Hammond's Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Hampden (Friezland), Cloncurry. *See* Pl. 23. *Includes* Hampden and Monitor Group of Copper Mines, *which see.* Smelting Works: *See under* Smelting Works in Queensland.

Hampden Group of Copper Leases, Cloncurry. *Min.Ref.* Calcite, *see* 457; Chlorite, 1424; Chrysocolla, 1502; Copper Ore, 2018; Copper Pyrites, 2084; Cuprite, 2399-2401; Graphite, 4572; Hematite, 4685; Iron Pyrites, 4924A; Kaolin, 5671; Limonite, 5766-5769; Malachite, 6123-6125; Redruthite, 7229-7231; Tenorite, 7711.

—— M.Ls. (244, 245, etc.), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1502; Copper Ore, 2018; Copper Pyrites, 2084; Cuprite, 2400, 2401; Graphite, 4572; Iron Pyrites, 4924A; Kaolin, 5671; Malachite, 6124; Redruthite, 7229, 7230; Tenorite, 7711.

—— Mines Sub-artesian Bore. *See under* Artesian Bores. No. 286.

—— S. M.L. (502), Hampden Group, Cloncurry. *Min.Ref.* Limonite, *see* 5768; Malachite, 6125.

Hampden, 20 miles N.W. of Mackay. *Min.Ref.* Coal, *see* 1646; Zircon, 8223.

GEOLOGICAL NOTE: The coal measures in this locality belong to the Lower Bowen Formation (Permo-Carboniferous) and contain seams of an inferior anthracite, but they have been much disturbed by intrusions of volcanic rocks and by granite. *See* G.S.Q. Pub. No. 164 for details.

Hann Co. Cook Dist. *See map,* Pl. 8.

Hannah's Silver-Lead Lode, Chowey Cr. *Min.Ref.* Galena, *see* 2717; Gold, 3568; Iron Pyrites, 4971A; Lead, 5723; Magnetite, 5975; Silver, 7435.

Hannay's (Geera) Bore. *See under* Artesian Bores. No. 285.

Hannigan's Claim, Quart Pot Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1002.

Hannon's Silver Mine, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2933; Stibnite, 7642; Zinc Blende, 8153.

Hanran (P.F.) Silver Selection, Sellheim Silver Field. *Min.Ref.* Cerussite, *see* 1277; Minium, 6623.

Han's Big Reef, Norton Goldfield. *Min.Ref.* Galena, *see* 3050; Gold, 4278; Iron Pyrites, 5377.

Happy Jack Reef, Table-top, Croydon Goldfield. *Min.Ref.* Gold, *see* 3543; Iron Pyrites, 4962; Mispickel, 6645.

Happy Valley, about 40 miles (by road) S. of Bowen. *Min.Ref.* Copper Pyrites, *see* 2239; Cuprite, 2458; Gold, 4073; Hematite, 4740, 4741; Hornblende, 4835; Iron Pyrites, 5274; Malachite, 6289; Marcasite, 6508. *See also* A.R.D.M. 171, 172 (1907).

Harbourages of Queensland. *See* notes under the following:—

Bowen.
Brisbane.
Broadmount.
Bundaberg.
Burketown.
Cairns.
Cooktown.
Gladstone.
Lucinda.
Mackay.
Maryborough.
Port Alma.
Rockhampton.
Thursday Island.
Townsville.

See also "Sailing Directions," published by the Marine Board, Brisbane. Price, 1s.

Hard Hill Lead, Black Ridge, Clermont *Min.Ref.* Gold (alluvial), *see* 3308.

Harden Park Bore. *See under* Artesian Bores. No. 367.

Hare's Excelsior M.L., Cloncurry. *Min.Ref.* Calcite, *see* 470; Copper Pyrites, 2119; Limonite, 5825; Redruthite, 7272.

Harlaxton, Toowoomba Range. *Min.Ref.* Olivine, *see* 6925A.

—— and Spring Bluff (between), 5 miles N. of Toowoomba. *Min.Ref.* Calcite, *see* 569; Ferro-Calcite, 576; Natrolite, 6897; Phacolite, 1315; Saponite (?), 7338A.

Harley's P.A., 4 miles S. of Kilkivan. *Min.Ref.* Chromite, *see* 1489.

Harmian Park Bore. *See under* Artesian Bores. No. 391.

Harmotome. *Compo.*, Hyd. silicate of alumina and baryta (a zeolite). *Colour*, usually white. *Lustre*, vitreous. *H.* = 4·5; *Sp.gr.* = 2·4.

4665. ——. Muldiva Mines, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

Hardness of Minerals. *See* Scale of Hardness.

Harp of Erin Reef, Upper Cape, Cape R. Goldfield. *Min.Ref.* Galena, *see* 2950; Gold, 4059; Iron Pyrites, 5268; Ironstone, 5553.

—— —— ——, Croydon Goldfield. *Min.Ref.* Gold, *see* 3558.

Harper's Hill, Mt. Perry. *Min.Ref.* Copper carbonate, *see* 1880; Copper Ore, 2022; Gold, 3583; Silver, 7430.

—— Mine, ½-mile E. of Calcifer Rail. Stn. *Min.Ref.* Magnetite, *see* 5989; Smithsonite, 7567.

—— Siding, 7 miles (by rail) S.E. of Chillagoe. *Min.Ref.* Hornblende, *see* 4828.

Harris and Party's Tin Mine, Rossville, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 819; Felspar, 2631; Mica, 6553; Mispickel, 6672; Tourmaline, 7848.

Harrison's (Rainscourt) Bore. *See under* Artesian Bores. No. 221.

Harrow Sub-artesian Bores. *See under* Artesian Bores. Nos. 261, 287.

Hartington Bore. *See under* Artesian Bores. No. 194.

Hartley's Creek, 20 miles N. of Redlynch Rail. Stn. (Cairns line). *Min.Ref.* Cassiterite, *see* 958A.

Harvey's Creek, Herberton. *Min.Ref.* Cassiterite, *see* 1092.

Hatfield's Tin Claim, Annan Tinfield. *Min.Ref.* Cassiterite, *see* 820.

Hathorn Bore. *See under* Artesian Bores. No. 432.

Hatton (Finch) Rail. Stn. *See* Finch Hatton.

Haughton Valley (Rail. Stn.), S. of Townsville. *Min.Ref.* Gypsum, *see* 4622.

Hausington Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Havelock Mine, Etheridge Goldfield *Min.Ref.* Copper Ore, *see* 2025; Copper Pyrites, 2148; Gold, 3727; Iron Pyrites, 5046; Marcasite, 6501; Pyrrhotite, 7154.

Hawking's Point, Magnetic Is., Cleveland Bay. *Min.Ref.* Gold, *see* 4000; Iron Pyrites, 5230.

Hawkwood, 48 miles W.S.W. of Gayndah. *Lat.*, 25° 47′ S.; *Long.*, 150° 49′ E. *Min.Ref.* Ilmenite, *see* 4888; Psilomelane, 7082.

Hayes's Creek Prov. Goldfield—

Situation: *See maps,* Pls. 8, 9. On head waters of Nesbit R. and Hayes's Cr., about 190 miles N.W. of Cooktown. *Co.* Weymouth; *Dist.* Cook. Centre about *Lat.* 13° 20′ S., *Long.* 143° 27′ E.

Discovery: In October, 1909, by prospectors Dodd and Preston.

Mineral Reference: Gold, *see* 3827, 3827a; Silver, 7468a1.

Gold, Average Values: Alluvial and Quartz. *See under* Gold.

Haydin Show, Wyandotte. *Min.Ref.* Cuprite, *see* 2457a; Malachite, 6288b.

Hayfield's Sub-artesian Bore. *See under* Artesian Bores. No. 118.

Haynes Bros.' Sub-artesian Bore. *See under* Artesian Bores. No. 246.

Haystack Plains Sub-artesian Bore. *See under* Artesian Bores. No. 317.

Hayward Reef, Pentland, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4054; Ironstone, 5552.

Hazelfield Bore. *See under* Artesian Bores. No. 415.

Hazledean. *See maps,* Pls. 14, 15. Situated about 35 miles S.W. of Mackay. *Lat.*, 21° 24′ S.; *Long.*, 149° 0′ E.

Geological Note: The rocks about this locality are made up of Permo-Carboniferous slates, sandstones, tuffs, and coal seams which rest on granite, and are partly covered by an unconformable series of conglomerate. The coal seams are small and of inferior quality. *See* G.S.Q. Pub. No. 164 for details and map.

—— (Par. of) (Por. 746), S. of Eton Rail. Stn. *Min.Ref.* Felspar, *see* 2644.

Hazlewood Cr., trib. of Bowen River. *Lat.*, 21° 17′ S.; *Long.*, 148° 30′ E. *Min.Ref.* Epsomite, *see* 2615.

—— —— Bore. *See under* Artesian Bores. No. 187.

Heavy Spar. *Syn.* Barytes, *which see.*

Hector Goldfield. Included in Mt. Morgan Goldfield.

—— Mine, 6 miles S. of Rockhampton. First gold-bearing reef worked in Queensland, and discovered in 1866. *Min.Ref.* Copper Pyrites, *see* 2299; Gold, 4331; Iron Pyrites, 5405; Pyrrhotite, 7162.

Hein's Lode, Limestone Range, S. of Townsville. *Min.Ref.* Garnet, *see* 3124; Gold, 3996; Hematite, 4736; Iron Pyrites, 5226; Malachite, 6287.

Helen Macgregor Reef, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3679.

Helena Reef, Cawarral Goldfield. *Min.Ref.* Gold, *see* 4322; Iron Pyrites, 5400.

Helensburgh Bore, Deception Bay. *See* Burpengary, *under* Coal Bores.

Helidon. *See maps,* Pls. 6, 7. Situated 72 miles (by rail) W. of Brisbane. *Lat.*, 27° 29′ S.; *Long.*, 152° 10′ E. *Min.Ref.* Coal, *see* 1718; Lithium carbonate, 5941. *Min.Ref.*, *see* 6572.

Geological Note: The rocks in the neighbourhood are sandstones, etc., belonging to the Walloon Formation (Trias.-Jura). Some of the sandstones in this district are even-grained and massive, and in Brisbane are used extensively for building purposes. *See also note under* Mineral Waters.

—— District Artesian and Sub-artesian Bores. *See under* Artesian Bores. Nos. 493-498.

—— District Bores. *See under* Artesian Bores. No. 288.

—— Spa Bore. *See under* Artesian Bores. No. 288.

Heliotrope. *Syn.* Bloodstone, *var. of* Chalcedony, *which see.*

Hell Hole Cr., near junction of Flagstone Cr. *Min.Ref.* Coal, *see* 1723a.

Hematite. *Syn.* Specular Iron, Iron Glance. *Compo.*, Sesquioxide of iron. *Colour,* reddish to iron-black. *Lustre,* metallic when crystallised, earthy, reddish. *Streak,* reddish, reddish-brown. *H.* = 5·5-6·5. *Sp.gr.* = 4·5-5·3. *Contents* (*max.*), Iron 70 per cent.

Note. *See under* Iron for geological, mineralogical, and other features.

4666. ——. *Assoc.with* Ilmenite. *Loc.* 10 miles N. of Black-eye Spring, McKinlay, 74 miles S.E.byE. of **Cloncurry.** *Co.* Allison; *Dist.* **Burke.** *Ref.* A.R., p. 107 (1907).

4667. Hematite. *Assoc.with* Minium, in black slate. *Loc.* Dugald Mine, Dugald R., 45 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 3 (1885).

4668. ——. In valley W. of Mt. Eurie, 40 miles N.byW. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 10, p. 7 (1885).

4669. ——. *Assoc.with* Iron Pyrites and Limonite. *Loc.* Gilded Rose Mine, Bishop's Cr., 11 miles E.S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 13 (1885), and 104, p. 3 (1895).

4670. ——. McKinlay R., 40 miles N. of McKinlay Township, and about 40 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*).

4671. —— (very pure ore). In large quantity. *Loc.* Mt. Leviathan, at Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 10, p. 5 (1885), and G.S.M.

4672. ——. Mt. Pisa, Cloncurry Township. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 10, p. 14 (1885).

4673. ——. *Assoc.with* Gold, Siderite, and Calcite, in quartz. *Loc.* Uncle Tom Reef, between Fisher's Cr. and Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 73 (1887).

4674. ——. In quartzose grits. Mt. Walker, 7 miles S. of Hughenden Rail. Stn. (Gt. Northern line). *Co.* Douglas; *Dist.* Burke. *Ref.* G.S.Q. Pub. 87, p. 20 (1892).

4675. ——. As a mass 20 ft. high. *Loc.* 1 mile from Cabbage-tree Cr., Leichhardt R., 44½ miles N.N.W. of Cloncurry. *Co.* Granada; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 7 (1885).

4676. —— (crystallised). Lawn Hills, Mendid Hill, 92 miles S.W. of Burketown. *Co.* Gregory; *Dist.* Burke. *Ref.* G.S.M.

4677. ——. *Assoc.with* Pyrolusite, in quartz lode. *Loc.* Police Cr., trib. of Gregory R., 88 miles S.S.W. of Burketown. *Co.* Gregory (*ante*). *Ref.* G.S.Q. Pub. 10, p. 10 (1885), and P.R.S.Q., vol. 4, p. 60 (1887).

4678. ——. *Assoc.with* Malachite, in slate. *Loc.* Mt. Gordon M.L. (597) (Mt. Gordon Group), S. of Oxide Cr., 2 miles N.N.E. of Mt. Oxide, 111 miles N.W. of Cloncurry. *Co.* Kamileroi; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 365, 366 (1908).

4679. ——. Flinders R., about 20 miles S.S.W. of Normanton. *Co.* Norman (*ante*). *Ref.* B.D.

4680. ——. On hill 2 miles from Gregory R., nr. Burketown. *Co.* Porchester; *Dist.* Burke.

4681. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Chrysocolla, Limonite, and Turgite, in quartz, calcite, and gossan. *Loc.* Belfast M.L. (303) (Belfast Group), 10 chains S.E. of Cloncurry, 2 miles N.N.E. of Mt. Start, 21 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 120-122 (1908).

4682. ——. *Assoc.with* Copper Pyrites, Tile Ore, Redruthite, Chrysocolla, and Limonite, in quartz and ferro-calcite. *Loc.* Policeman Claim (206) (Boomerang Group), Cone Cr., 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 100, 101 (1908).

4683. ——. *Assoc.with* Malachite and Limonite, in quartz and schist. *Loc.* Horseshoe M.L. (451) (Daisy Group), 1¼ mile N. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 104, 105 (1908).

4684. ——. *Assoc.with* Malachite and Limonite, in quartz. *Loc.* Jessie M.L. (238) (Eva Group), 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 156, 157 (1908).

4685. ——. *Assoc.with* Limonite. *Loc.* Mt. Sylvia M.L. (422) (Hampden Group), 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 62 (1908).

4685A. ——. *Assoc.with* Copper Pyrites, Redruthite, Chrysocolla, and Hypersthene, in slate and gossan. *Loc.* Springs Peak M.L. (562), Pearl Group, Corella R., 30 miles W.SW. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 189 (1908).

4686. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, Azurite, Chrysocolla, and Limonite, in slate. *Loc.* Easter Gift M.L. (290) (Pioneer Chief Group), 1 mile E. of Mt. Start, W. of Marabah Township, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 127-129 (1908).

4687. ——. *Assoc.with* Copper Pyrites, Redruthite, Bornite, Tile Ore, Malachite, Iron Pyrites, Limonite, Muscovite, and Calcite, in schist, slate, and quartz. *Loc.* Timberoo M.L. (716) (Timberoo Group), Friedman's Cr., br. of Slaty Cr., 18 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 172-175 (1908).

4688. ——. *Assoc.with* Copper carbonate and Tetrahedrite, in chloritic slate. *Loc.* Sel. 2458, 2 miles W.N.W. of Chinaman's Lode and Duck Cr., 23½ miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 10, p. 5 (1885).

4689. —— (micaceous). In quartz schist. Top Camp Diggings (Mary Douglas Hill), 24 miles S.byW. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* B.D.

4690. ——. *Assoc.with* Gold, Limonite, Minium, and Iron Pyrites, in quartz. *Loc.* Eureka Reef, 1 mile from Flanagan's, 13 miles E.byS. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey (*ante*). *Ref.* G.S.Q. Pub. 35, p. 11 (1887), and G.S.M.

4691. —— *Assoc.with* Graphite, in quartz. *Loc.* Iron Duke Reef, Golden Gate, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 9 (1887).

4692. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Graphite, in quartz. *Loc.* King of Croydon Reef, 6 miles S.E.byE. of Croydon Rail Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 7 (1887).

4693. —— (yellow). *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Sovereign No. 1 Mine (Post Hole Reef), ¾-mile N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

4694. ——. *Assoc.with* Native Copper, Cuprite, Tetrahedrite, Redruthite, Malachite, Iron Pyrites, Magnetite, and Limonite, in schist and quartz. *Loc.* Crusader M.F. (2549), Crusader Group, Coolullah Run, E. of Coppermine Cr., 68½ miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 8 (1885), 215, pp. 334, 335 (1908).

4695. ——. *Assoc.with* Copper Ores, in lode in clay shales. *Loc.* Mt. Oxide, nr. Gunpowder Cr., 109 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Assay:* Copper = 28 per cent.; Silver = 1½ oz. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 153, p. 9 (1900).

4696. ——. *Assoc.with* Gold, Iron Pyrites, Magnetite. Mispickel, Native Bismuth, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, Chalcedony, and Epidote. *Loc.* Biggeenden Bismuth Mine, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pubs. 60 (1890), 173 (1902), and 194 (1904).

4697. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Tenorite, Malachite, Iron Pyrites, Pyrrhotite, Mispickel, Hematite, Bismuthinite, Zinc Blende, and Calcite, in quartz reef. *Loc.* Commonwealth Mine, nr. Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), and 207, pp. 14-19 (1907).

4698. —— (micaceous). *Assoc.with* Native Bismuth, Bismuthinite, Calcite, and Limestone. *Loc.* Don Jon Mine, nr. Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* B.D.

4699. —— (earthy). *Assoc.with* Gold and Bismite. *Loc.* Mt. Shamrock Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 25, p. 1 (1886), P.R.S.Q., vol. 4, p. 39 (1887), and G.S.M.

4700. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* ½-mile E 30 degrees N. of Black Watch Reef, Scrub Paddock Diggings, 13 miles N.N.E. of Nanango, 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 29, p. 4 (1886).

4701. ——. *Assoc.with* Limonite. *Loc.* Cabbage-tree Cr., br. of Splinter Cr., Dawes Range, about 40 miles N.N.W. of Mt. Perry Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 194, p. 31 (1904).

4702. ——. *Assoc.with* Gold, Cuprite, and Stibnite, in quartz reef. *Loc.* Lady Augusta Lease (45), Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol (*ante*). *Ref.* G.S.Q. Pubs. 102, p. 4 (1895), 160, pp. 6-11 (1901).

4702A.——. *Assoc.with* Limonite, in quartz. *Loc.* 6 miles from Eidsvold Township, about 41 miles N.W. of Gayndah Rail Stn. *Co.* Yarrol (*ante*). *Ref.* G.S.Q. Pub. 43, p. 1 (1887).

4703. —— (micaceous). Rosslyn Stn., 14 miles W. of Mt. Perry Rail. Stn. *Co.* Yarrol (*ante*) *Ref.* G.S.M.

4704. Hematite. *Assoc.with* Gold, in quartz reef. *Loc.* Anglo-Saxon 1 W., Limestone, 60 miles S. of Laura Rail. Stn. (Cooktown line). *Co.* Chelmsford; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 46, p. 1 (1889).

4705. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. All Nations' Reef, Ebagoolah, Hamilton Goldfield, 33 miles W. of Port Stewart. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 5 (1901).

4706. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* B.B. Reef, McLeodsville, 25 miles N. of Dimbullah Rail. Stn. (Cairns line), Hodgkinson Goldfield. *Co.* Dagmar; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 26 (1884).

4707. ——. In lode. Einasleigh R., 10 miles from Einasleigh Rail. Stn. (Etheridge line). *Co.* Gilbert; *Dist.* Cook. *Ref.* O.R.

4708. ——. *Assoc.with* Gold, Iron Pyrites, and Limonite, in quartz. *Loc.* Caledonia Reef, Caledonia Cr., trib. of Goldsmith's Cr., 9 miles S.E. of Charleston Rail. Stn. Etheridge line). *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

4709. ——. Potosi Mine, Irvinebank, 10 miles S.W. of Stannary Hills Rail. Stn. (br. Chillagoe line), **Walsh and Tinaroo Mineral Fields.** *Co.* Hodgkinson; *Dist.* Cook. *Analysis*: Moisture = 1·82 per cent.; Water in Combination = 10·24 per cent.; Peroxide of Iron = 71·01 per cent.; Silica = 15·80 per cent.; Alumina = 3·00 per cent.

4710. ——. *Assoc.with* Cuprite, Tile Ore, Tenorite, Malachite, Azurite, Chrysocolla, and Magnetite. *Loc.* Boomerang Copper Mine, Marble Cr., 1 mile W. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 69, p. 8 (1891), 119, p. 36 (1897), and G.S.M.

4711. —— (pure). *Assoc.with* Copper carbonate. Boomerang Mine (west of), Marble Cr. (*ante*). *Ref.* G.S.Q. Pub. 69, p. 8 (1891).

4712. ——. *Assoc.with* Cuprite, Tetrahedrite, Malachite, and Minium. *Loc.* Mollie Lease, Marble Cr. (*ante*). *Assays*: *See* No. 2435. *Ref.* G.S.Q. Pub. 69, p. 8 (1891).

4713. ——. *Assoc.with* Copper Pyrites, Cuprite, Tile Ore, Bornite, Tetrahedrite, Tenorite, Malachite, Atacamite, and Iron Pyrites, in quartz and felspar lode. *Loc.* Ruddygore Mine, 2 miles N.E. of Chillagoe Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 69, p. 7 (1891), and 134, p. 10 (1898).

4714. ——. *Assoc.with* Minium, Cerussite, and Anglesite. *Loc.* Excelsior Mine, Dargalong, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

4714A. ——. *Assoc.with* Cassiterite and Wolfram. *Loc.* Gurrumba, Reid's Cr., br. of Emu Cr., 2 miles S. of Emuford, 12 miles S. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* A.R., p. 47 (1906).

4715. ——. *Assoc.with* Magnetite, Limestone, Chert, Garnet, Wollastonite, and Epidote. *Loc.* Mt. Lucy, 4 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 134, p. 16 (1898), and 196, pp. 6-8 (1905).

4716. ——. *Assoc.with* Limonite and Cerussite. *Loc.* Girofla Mine, Mungana Rail. Stn. (Chillagoe line), 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, p. 12 (1898).

4717. ——. *Assoc.with* Native Copper, Cuprite, Tetrahedrite, Malachite, Azurite, Manganese-dioxide, and Selenite, in lode. *Loc.* Griffith Lease, Julia Cr., 2 miles S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 5 (1891), and 134, p. 11 (1898).

4718. ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Galena, Cerussite, Minium, Zinc Blende, and Garnet, in quartz. *Loc.* Penzance Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 6 (1891), and 134, p. 11 (1898).

4719. ——. *Loc.* Red Hills, Mungana Rail. Stn. (Chillagoe line), 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 56 (1900).

4720. ——. *Assoc.with* Tenorite and Copper carbonate. *Loc.* Oruba Mine, 2 miles E. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, p. 9 (1898).

4720A. ——. *Assoc.with* Copper Pyrites, Bornite, Redruthite, Malachite, Azurite, Limonite, Cinnabar, and Jasper, in quartz and calcite. *Loc.* St. George Copper and Coal Mines, Little R., 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mossman; *Dist.* Cook. *Ref.* G.S.Q. Pub. 222, pp. 21-32 (1910).

4721. ——. *Assoc.with* Gold, in quartz. *Loc.* Meyer's Leader, Mareeba Goldfield, 5 miles S.E. of Mareeba Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 97, p. 6 (1894).

4722. ——. Russell Goldfield, 15 to 20 miles W.N.W. of Geraldton. *Co.* Nares (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 56 (1900).

4723. —— (massive). Gilberton, 48 miles S.byE. of Charleston Rail. Stn. (Etheridge Goldfield). *Co.* Victor; *Dist.* Cook. *Ref.* G.S.M.

4724. ——. *Assoc.with* Limestone, in sedimentary rocks. *Loc.* 5 miles up Percy R., br. of Gilbert R., 41 miles S. of Charleston Rail. Stn. (Etheridge line). *Co.* Victor (*ante*). *Ref.* G.S.Q. Pub. 151, p. 2 (1900).

——. *See further* Walsh and Tinaroo references, No. 4728, etc.

4724A. ——. *Assoc.with* Gold, Iron Pyrites, Limonite, and Manganese-dioxide, in quartz. *Loc.* Glenelg Reef, nr. Oakey Cr., 9 miles E. of Glenelg Head Stn., 55 miles (by road) W.S.W. of Warwick. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 40, pp. 1, 2 (1887).

4725. ——. *Assoc.with* Magnetite. *Loc.* Pike's Cr., nr. Stanthorpe Township. *Co.* Bentinck (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

4726. ——. Slade Vale, nr. Warwick, 169 miles (by rail) S.W. of Brisbane (main line). *Co.* Merivale; *Dist.* Darling Downs.

4727. ——. In large quantities. Thane's Cr., 24 miles W. of Warwick. *Co.* Merivale (*ante*). *Ref.* B.D.

4728. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Grand Junction Tin Mine, Coolgarra, 11 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

4729. ——. *Assoc.with* Cassiterite and Limonite, in quartz. *Loc.* Magdala Tin Mine, Magdala Hill, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

4730. ——. *Assoc.with* Cassiterite and Penninite, in quartz lode. *Loc.* Tasmania Tin Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

4731. ——. *Assoc.with* Cassiterite, Wolfram, Iron Pyrites, Göthite, Limonite, Mispickel, Penninite, Azurite, Malachite, Websterite, Chlorite, Topaz, and Fluorspar, in quartz. *Loc.* In the Tin Mines, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

4732. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Magnetite, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, Chalcanthite, Mispickel, Zinc Blende, Cerussite, and Minium, in quartz lodes in quartzite and porphyry. *Loc.* Mt. Garnet Mines, Mt. Garnet, Return Cr., Wild R., 136 miles (by rail) S.W. of Cairns. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

——. *See further* Walsh and Tinaroo references, No. 4709, etc.

4733. ——. *Assoc.with* Limonite, Malachite, Azurite, Tetrahedrite, Galena, and Mimetite, in lode. *Loc.* Mt. Garnet (*ante*). *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

4734. ——. *Assoc.with* Gold, Iron Pyrites, Magnetite, Limonite, Chalcanthite, Manganese-dioxide, and Talc, in porphyritic rock. *Loc.* Mt. Leyshon Mine, 16 miles S. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pubs. 18, pp. 1, 2 (1885), and 73, p. 13 (1891).

4735. ——. *Assoc.with* Gold, Iron Pyrites, and Pyrrhotite (?), in lode. *Loc.* Greasy Bill's Reef, Pyramids or Seventy-mile Diggings, 3½ miles N.N.E. of Mt. Leyshon, 19½ miles (by road) S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.Q. Pub. 1, p. 19 (1879).

4736. ——. *Assoc.with* Gold, Iron Pyrites, Malachite, and Garnet, in calcite. *Loc.* Hein's Lode, Limestone Range, W. of Double Barrel Cr., 27 miles (by rail) S. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 77, p. 7 (1891).

4737. ——. Pandanus Cr., nr. Pentland Cr., Cape R. Goldfield, 66 miles (by rail) S.W.byS. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* B.D.

4738. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Union Reef, between Mt. Davenport and Davenport Cr., 4 miles N.W. of Cape R. Rail. Stn. (Gt. Northern line), Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 2 (1891), and G.S.M.

4739. ——. In quartz. Tableland, nr. Lake Lucy, Upper Burdekin, 54 miles S.W.byW. of Cardwell. *Co.* Gunawarra; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 4 (1891).

4740. Hematite. *Assoc.with* Gold, Cuprite, and Malachite. *Loc.* Copper King Mine, $1\frac{1}{2}$ mile from Lamington Mine, Happy Valley, $41\frac{1}{2}$ miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Assay:* Gold = 1 dwt. 13 gr. per ton, Copper = 2 per cent. *Ref.* A.R., p. 62 (1906).

4741. —— (micaceous). *Assoc.with* Iron Pyrites and Copper Pyrites. *Loc.* Lamington Mine, head of Lah-di-dah Cr., Happy Valley (*ante*). *Ref.* O.R.

4742. ——. *Assoc.with* Gold, Silver, Cuprite, and Malachite. *Loc.* Mt. Cavanagh, Mare's Nest Cr., Normanby Road, 44 miles S.S.E. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Assay: See* 2459. *Ref.* A.R., p. 60 (1906).

4743. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Ellen Boss Reef, Dreghorn Diggings, $4\frac{1}{2}$ miles from Burdekin River, 15 miles S. of Ravenswood. *Co.* Murray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

4744. ——. In quartz lode. *Loc.* Biscuit Cr., Upper Burdekin, below Kangaroo Hills Stn., 40 miles S.W. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 10 (1891).

4745. ——. *Assoc.with* Native Silver, Galena, Cerussite, Malachite, Chrysocolla, Mispickel, Zinc Blende, and Manganese-dioxide, in lode. *Loc.* Hidden Treasure Lease (165), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna (*ante*). *Assays: See* No. 1241. *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), and 82, p. 7 (1892).

4746. ——. *Assoc.with* Limonite, Azurite, and Malachite, in lode. *Loc.* Iron Mountain, N. of Donnybrook, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 71, p. 10 (1891).

4747. ——. *Assoc.with* Iron Pyrites, Limonite, Cassiterite, Malachite, and Azurite, in quartz. *Loc.* M.L. (40 acre), in gully, Douglas Cr., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

4748. ——. *Assoc.with* Galena, Cerussite, and Copper carbonate, in gossan. *Loc.* Mt. Brown Lease (183), Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Assay:* Lead = 10·5 per cent., Silver = 8 dwt. 4 gr. per ton. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

4749. ——. *Assoc.with* Minium, Cerussite, Chrysocolla, Copper carbonate, and Zinc Blende, in gossan lode. *Loc.* White Wings P.A., Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Assays:* Silver (1) = 16 oz., (2) = 2 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

4750. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Manganese-dioxide, Zinc Blende, Smithsonite, Mispickel, Ironstone, Fluorspar, and Garnet, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

4751. ——. *Assoc.with* Zinc Blende, in copper-stained quartz. *Loc.* Victory Lease (185), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

4752. ——. *Assoc.with* Galena, Cerussite, Copper Pyrites, Bornite, Tile Ore, and Mispickel, in lode. *Loc.* Wallaroo Lease (162), nr. Running Crossing, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 3 oz. 13 dwt. 12 gr. per ton, Copper = 1·7 per cent. *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

4753. ——. *Assoc.with* Malachite. *Loc.* Lady Annie Silver Mine, Argentine (Star River) Silver Field, 50 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Assay:* Silver = 186 oz. per ton., Lead = 69 per cent. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

4754. ——. *Assoc.with* Minium, Anglesite, and Galena, in quartz. *Loc.* Struck Oil Lode, Argentine (Star River) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

4755. ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Thermopylae Reef, Argentine (Star R.) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

4756. ——. *Assoc.with* Wolfram, Stilbite, Mica, and Garnet, in lode. *Loc.* Eungella Stn., Broken R., 30 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 39, p. 6 (1887).

4757. ——. In quartz leaders. *Loc.* Kelvin Grove Silver Mines, Kelvin Grove, 32 miles S.S.E. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 53, p. 10 (1889).

4758. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Bismutite, and Mispickel, in quartz veins. *Loc.* Gold Workings, Mine Cr., nr. Black Waterhole Cr., 24 miles S.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 164, p. 10 (1901).

4759. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 5, p. 10 (1879).

4759A.—— (earthy). *Assoc.with* Azurite and Malachite, in quartz. *Loc.* O'Brien's Mine, Pine Vale Cr., 34 miles (by rail and road) S.W.byS. of Mackay, Mt. Spencer Gold and Mineral Field. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), and 229, pp. 18, 19 (1910).

4760. —— Seaforth Estate, about 20 miles N.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* L.C.B.

4761. ——. Miclere Diggings, 20 miles N.byW. of Clermont. *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 27, p. 1 (1886).

4762. ——. *Assoc.with* Gold, Copper Pyrites, Cuprite, Malachite, Azurite, Native Bismuth, Bismuthinite, Bismutite, Bismite, Galena, Manganese-dioxide, and Ironstone, in lode. *Loc.* Daisy Bismuth Mine, 3 miles E. of Eukalunda, 92 miles S.W.byS. of Bowen, Sellheim Mineral Field. *Co.* Sellheim; *Dist.* Kennedy South. *Assay:* Bismuth = 33·76 per cent. *Ref.* G.S.Q. Pub. 57, p. 8 (1889).

4763. ——. *Assoc.with* Copper Pyrites, Manganese-dioxide, Bismite, and other Bismuth Ores, in lode. *Loc.* Eukalunda Bismuth Mine, 3 miles E. of Eukalanda (*ante*). *Ref.* G.S.Q. Pub. 57, p. 8 (1889).

4764. ——. Containing Gold in a large siliceous body, in slate country. *Loc.* Leviathan Mine, Clermont Goldfield, 229 miles (by rail) W.byN. of Rockhampton (Central line). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* B.D.

4765. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Pumpkin's Claim, Deep Ground, Black Ridge, 12¾ miles N.byW. of Clermont (*ante*). *Ref.* G.S.Q. Pub. 201, p. 126 (1906).

4766. ——. *Assoc.with* Gold, Copper Oxide, Copper carbonate, and Manganese-dioxide, in gossan lode. *Loc.* Peak Downs Copper Mine, Copperfield, 4 miles S.S.W. of Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 27, p. 7 (1886).

4767. ——. *Assoc.with* Gold and Limonite, in gossan. *Loc.* Stewart and Spier's Mine, Mt. Clifford, between Retreat and Ruby Creeks, 9½ miles N.W. of Anakie Rail. Stn. (Central line). *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 127, p. 3 (1898).

4768. ——. Peak Vale Stn., 18 miles S.S.W. of Clermont. *Co.* Clermont (*ante*). *Ref.* B.D.

4769. ——. *Assoc.with* Gold and Limonite, in slates. *Loc.* N. of Policeman Cr., 9 miles N. of Anakie Rail. Stn. (Central line). *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 172, p. 4 (1902).

4769A.——. *Assoc.with* Malachite and Chrysocolla, in granite. *Loc.* Brown's M.F. (1807), Native Youth P.P.A. (129), and Paddock Workings, Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, pp. 21, 39 (1910).

4769A1.——. *Assoc.with* Copper Pyrites, Malachite, and Azurite, in quartz. *Loc.* Ballyhooley Claim, 5 miles from Mt. Flora Freehold, Mt. Flora Gold and Mineral Field (*ante*). *Ref.* A.R., p. 243 (1910).

4769B. ——. *Assoc.with* Malachite, Azurite, and Manganese-dioxide, in granite. *Loc.* Emperor P.P.A. (320), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, p. 25 (1910).

4769C.——. *Assoc.with* Malachite, Azurite, and Mispickel (?), in slate. *Loc.* Fitzgerald's M.F. (1408), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, p. 26 (1910).

4769D.——. *Assoc.with* Iron Pyrites, Copper Pyrites, Malachite, and Azurite, in granite. *Loc.* Iron Duke M.C. (42), and Painted Peak M.F. (1807), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 27, 39 (1910).

4769E.——. *Assoc.with* Iron Pyrites, Copper Pyrites, Malachite, and Azurite, in gossan, in slate. *Loc.* Laird of the Hills M.L. (32), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 30, 31 (1910).

4769F.——. *Assoc.with* Iron Pyrites, Limonite, Redruthite, Malachite, and Azurite, in granite. *Loc.* Monarch P.P.A. (116, etc.), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 36-38 (1910).

4769G.——. *Assoc.with* Iron Pyrites, Pyrrhotite, Limonite, Magnetite, Copper Pyrites, Malachite, and Azurite, in granite and slate. *Loc.* Roger's Back Sel. M.F. (1430), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 41, 42 (1910).

4769H.——. *Assoc.with* Mispickel and Malachite, in gossan in granite. *Loc.* True Blue M.L. (29), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 43, 44 (1910).

4770. ——. As pseudomorphs, after Iron Pyrites. *Loc.* Yatton Goldfield, 21 miles S.W.byW. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* P.R.S.Q., vol. 4, p. 57 (1887).

4771. Hematite. *Assoc.with* Copper Pyrites, Tenorite, Malachite, and Azurite. *Loc.* Mt. Orange Copper Mines, 75 miles S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* P.R.S.Q., vol. 4, pp. 52, 77 (1887).

4772. ——. Caboolture, 31 miles (by rail) N. of Brisbane (North Coast line). *Co.* Canning; *Dist.* **Moreton.** *Ref.* O.R.

4773. ——. Blackbutt, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* O.R.

4774. ——. *Assoc.with* Chlorite and Calcite. *Loc.* Caboonbah, Brisbane R., 12 miles N.N.E. of Esk Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Ref.* G.S.M.

4775. —— (massive, impure). *Loc.* Wivenhoe, Brisbane R., about 6 miles N.E.byN. of Fernvale Rail. Stn. (Brisbane-Valley line), 45 miles (by rail and road) W.byN. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* G.S.M.

4776. ——. Pine Mountain, 7 miles (by rail) N.N.W. of Ipswich (Brisbane-Valley line), 31 miles (by rail) W.S.W. of Brisbane. *Co.* Churchill; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 194, p. 53 (1904).

4777. —— (pure). Por. 140, Par. of Dixon, 13 miles E. of Esk Rail. Stn. (Brisbane-Valley Br. line), 80 miles (by rail and road) N.W.byN. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 194, p. 57 (1904).

4777A.——. *Assoc.with* Gold and Silver. *Loc.* Dundas, 16 miles N.N.W. of Ipswich. *Co.* Stanley (*ante*). *Ref.* A.R., p. 316 (1911).

4778. ——. Beenleigh, 24 miles (by rail) S.E. of Brisbane (South Coast line). *Co.* Ward (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 57 (1887).

4779. ——(specular). Crow's Cr., Barmundoo Run, 35 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.**

4780. ——. *Assoc.with* Magnetite. *Loc.* Por. 22v, Pemberton, Boyne R., 19 miles S. of Gladstone. *Co.* Clinton (*ante*). *Analysis:* Iron = 64·9 per cent., silica = 6·74 per cent.; Phosphorous = nil; Sulphur = trace. *Ref.* G.S.Q.P. 94, p. 26 (1904).

4781. ——. *Assoc.with* Magnetite. Por. 10v, Pemberton, 3½ miles S. of Marblestone Crossing, 24 miles S. of Gladstone. *Co.* Clinton (*ante*). *Analysis:* Iron, 67·4 per cent. *Ref.* G.S.Q. Pub. 194, p. 26 (1904).

4782. ——. *Assoc.with* Gold, Silver, Galena, Minium, Massicot, Anglesite, Cerussite, and Limonite, in gossan. *Loc.* Bompa Silver-Lead Mine, Glassford Cr., 2 miles W.byS. of Littlemere Rail. Stn. (Boyne-Valley line), 53 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 159, pp. 7, 8 (1901).

4783. ——. *Assoc.with* Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, Galena, Zinc Blende, Garnet, Chlorite, and Calcite, in lode. *Loc.* Glassford Cr. Copper Mines, Glassford Cr. (*ante*). *Ref.* G.S.Q. Pubs. 150, p. 5 (1900), and 194, p. 28 (1904).

4784. ——. Blue Bag Shaft, in Glassford Cr. Mine, Glassford Cr. (*ante*). *Ref.* G.S.Q. Pub. 194, p. 30 (1904).

4785. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Tile Ore, Malachite, Azurite, Iron Pyrites, Magnetite, Limonite, and Calcite. *Loc.* Many Peaks Copper Mine, Deception Cr., nr. Glassford Cr., 50 miles S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 150, pp. 7, 8 (1900), and 194, p. 28 (1904).

4786. ——. Por. 406, Riverston, New Zealand Gully, 17 miles S. of Gladstone. *Co.* Clinton (*ante*). *Analysis:* Iron = 59·3 per cent. *Ref.* G.S.Q. Pub. 194, p. 25 (1904).

4787. ——. In dykes. New Zealand Gully (*ante*). *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

4787A.——. *Assoc.with* Gold and Silver, in quartz. *Loc.* Found-at-Last Mine, One Tree Hill, 1 mile S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* (and *Assays*) Q.G.M.J., vol. 3, pp. 606, 607 (1902).

4788. ——. *Assoc.with* Magnetite, Epidote, and Garnet. *Loc.* ½-mile S.S.E. of Targinie Head Stn., 9 miles W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Analysis:* Iron = 64·9 per cent., Silica = 5·2 per cent., Phosphorus = nil, Sulphur = trace.

4789. —— (micaceous). *Assoc.with* traces of Malachite, in quartz. *Loc.* Miriam Vale, 68 miles (by rail) N.W.byW. of Bundaberg (North Coast line). *Co.* Flinders; *Dist.* Port Curtis. *Ref.* L.C.B.

4790. ——. Nr. Kabra Rail. Stn. (Mt. Morgan line), 11 miles (by rail) S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

4791. ——. *Assoc.with* Magnetite. Por. 95v, Fitzroy, 15 miles N.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Analyses:* Iron (1) = 67 per cent., (2) = 73 per cent. *Ref.* G.S.Q. Pub. 194, p. 13 (1904).

4792. ——. Stanwell Quarry, 1½ mile S.E. of Stanwell Rail. Stn. (Central line). *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

4793. ——. Stewart's Cr., 3 miles W.N.W. of Stanwell Rail. Stn., 20 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

4794. ——. *Assoc.with* Magnetite. Iron Is., Duke Group, near Broadsound, 40 miles N.E. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* G.S.M. and G.S.Q. Pub. 194, p. 10 (1904). Analysis, *see* No. 6048.

4795. ——. *Assoc.with* Magnetite and Copper Pyrites. *Loc.* Iron Knob, Stanage Point, 37½ miles E.N.E. of St. Lawrence. *Co.* Palmerston (*ante*). *Analysis:* Iron = 60 per cent., Phosphorus = nil. *Ref.* G.S.Q. Pub. 194, p. 12 (1904).

4796. ——. *Assoc.with* Garnet Rock. *Loc.* Spring Cr. Diggings, 20 miles W.byS. of Many Peaks Rail. Stn. (Boyne Valley line), 78 miles (by rail and road) S.byW. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 31 (1904).

4797. ——. Constitution Hill, nr. Dee R., 3 miles N.E. of Mt. Morgan Rail. Stn., 27 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Analysis:* Iron = 62·40 per cent. *Ref.* G.S.Q. Pub. 194, p. 15 (1904).

4798. ——. *Assoc.with* Magnetite and Limonite. *Loc.* Iron Gully, br. of Boulder Cr., 6 miles W.S.W. of Mt. Morgan Rail. Stn., 30 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Analysis:* Iron = 62·65 per cent. *Ref.* G.S.Q. Pub. 194, p. 16 (1904).

4798A.—— (titaniferous). Oakey and Pleasant Lodes, Alma Creek, 15 miles S.S.E. of Mt. Morgan Rail. Stn. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 194, p. 18 (1904).

4799. ——. *Assoc.with* Iron Pyrites, Magnetite, Copper Pyrites, Copper carbonate, and Manganese-dioxide. *Loc.* Callide or 5-Mile Copper Mines, Kroombit, 50 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 194, p. 27 (1904), and G.S.M.

4799A.——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Iron Pyrites, Magnetite, and Limonite, in gossan lodes. *Loc.* M.L. (262), Kroombit Copper Mines, 4¼ miles E.S.E. of Kroombit H. Stn., 56 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 98 (1906).

4800. ——. *Assoc.with* Gold and Limonite, in lodes. *Loc.* Mt. Alexander Mines, 8 miles E.S.E. of Mt. Morgan Rail. Stn., 32 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 132, p. 17 (1898).

4800A.——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Magnetite, Limonite, Göthite, and Pyrolusite, and Satin Spar, in vesicular quartz, quartzite, and kaolin. *Loc.* Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pubs. 17 (1884), 47 (1888), 83 (1892), and 132 (1898).

4801. ——. *Assoc.with* Gold, in quartz. *Loc.* Manukau Mine, Mt. Victoria, 3 miles W.S.W. of Mt. Morgan Rail. Stn., 27 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 87, p. 11 (1892).

4802. ——. *Assoc.with* Copper carbonate, in gossan. *Loc.* Mt. Coora S. Lode, 8 miles S.S.E. of Kilkivan Rail. Stn., Black Snake Goldfield. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

4803. ——. *Assoc.with* Gold, Magnetite, and Copper carbonate, in quartz. *Loc.* Rose, Shamrock, and Thistle Mine, 10 miles S. of Kilkivan Rail. Stn., Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

4804. ——. Gigoomgan Run, 35 miles W.S.W. of Maryborough. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* L.C.B.

4804A.——. *Assoc.with* Cuprite, Tetrahedrite, Azurite, and Malachite. *Loc.* White Rocks Copper Lease, Marodian Goldfield, 8 miles N. of Kilkivan Rail. Stn., 56 miles (by rail and road) N.W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 11 (1902).

4805. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tenorite, Malachite, Azurite, Iron Pyrites, and Limonite, in lodes in syenitic granite. *Loc.* Calgoa Copper Mines, Thunder Cr., 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 207, pp. 5-11 (1907).

4806. ——. *Assoc.with* Gold, Iron Pyrites, Graphite, and Calcite, in diorite. *Loc.* Campbell's Reef, Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 179, p. 8 (1902).

4807. Hematite. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Ortt's Mine, Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 8 (1902), and G.S.M.

4808. ——. *Assoc.with* Actinolite, Garnet, Epidote, etc. *Loc.* Yorkey's Surprise Gold M.L., Yorkey's Goldfield (*ante*).

4809. ——. As pseudomorphs after Iron Pyrites. *Loc.* Near Noosa, 15 miles N.N.E. of Yandina Rail. Stn. (North Coast line), 84 miles (by rail and road) N. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.M.

4810. ——. *Assoc.with* Gold, Iron Pyrites, Limonite, and Psilomelane, in quartz. *Loc.* Caledonia Claim, Sudest Is., 448 miles E.S.E. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 29 (1892).

4811. ——. *Var.* **Red Ochre.**. *Assoc.with* Tile Ore, Azurite, Malachite, and Cassiterite, in shale and greywacke. *Loc.* Ironclad Tin and Copper Mine, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 13, p. 21 (1883).

4812. —— ——. *Assoc.with* Cuprite, Tile Ore, Malachite, and Azurite, in quartzites, greywackes, and mica shales. *Loc.* Shaughran Copper Mine, Watsonville (*ante*). *Est. Contents:* Copper = 7 and 10 per cent. *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

4813. —— ——. *Assoc.with* Iron Pyrites, Marcasite, Mispickel, Limonite, Copper Pyrites, Copper carbonate, Chalcanthite, Cassiterite, and Wolfram. *Loc.* Try Again and Chance Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

——. *Var.* **Reddle** (Red Ochre with more or less clay).

4814. —— ——. Glenormiston, Georgina R., 340 miles W. of Longreach (Central line). *Co.* Georgina; *Dist.* **Gregory North.** *Ref.* Q.M.

Hemimorphite. *Syn.* Smithsonite, *which see.*

Hemmant, 9 miles N.E. of Brisbane. *Min.Ref.* Coal, *see* 1771A.

Henderson's Bore. *See under* Artesian Bores. No. 448.

Henley Park Bore. *See under* Artesian Bores. No. 204.

Henrietta Creek, Jordan Goldfield. *Min.Ref.* Garnet, *see* 3113, 3160, 3163; Gold (alluvial), 3220; Pleonaste, 7586; Rutile, 7329; Sapphire, 2341; Zircon, 8220.

Henry Grattan Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Hensey Mine, 3½ miles S.S.E. of Chillagoe Rail. Stn. *Min.Ref.* Copper Ore, *see* 2030.

Herbert Cr. Diggings, Gogango Ranges, Central Rail. line. *Min.Ref.* Gold (alluvial), *see* 3396.

GEOLOGICAL NOTE: The rocks consist of highly fissile clay slates of undetermined age. The reefs were abandoned and the alluvial deposits worked out many years ago.

Herbert River. Heads in the Herberton country, flows S., then S.E. to Rockingham Channel, N. of Halifax Bay. Length, about 200 miles. Tributaries: Wild R., Dry R., Return Cr., Smith's Cr., Nettle Cr., Nigger Cr. NOTE: Highly mineralised country occurs at the heads of the Herbert R., the principal centres being Mt. Garnet, Coolgarra, Newellton, and Herberton. *Min.Ref.* Barytes, *see* 271; Cairngorm, 7179; Gold, 3877; Halite, 4654; Magnetite, 6006; Wolfram, 8012; Zinc Blende, 8115.

Herbertshire Bore. *See under* Artesian Bores. No. 229.

Herbertina Tin Claim, Watsonville. *Min.Ref.* Bismuth (native), *see* 334; Cassiterite, 903; Chlorite, 1438; Copper Pyrites, 2159; Stannite, 7596.

Herberton—

SITUATION: *See maps,* Pls. 16, 17, 22. The town is 82 miles (by rail) S.W. byS. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Lat.*, 17° 14′ S.; *Long.*, 145° 23′ E.

DISCOVERIES: Tin discovered by J. Atherton in Herbert R. in 1879, by John Newell at Herberton in the same year, and by Messrs. Newell, Jack, and party in Prospectors' Gully in 1880. Great Northern tin deposit discovered on 19th April, 1880, work commencing on 8th May. Dry R., first mentioned on 16th October, 1880. Nettle Cr. Tin Mines opened 19th February, 1881.

POPULATION: 991 (estimated 1910). *See under* Herberton G. and M. Field for population of field up to 1911.

Herberton—*continued:*

Climate: Rainfall, yearly average between 1902-1907 = 44·40 inches. Wet days, 57.

Mineral Statistics:

Tin,	*see stat. tables,*	Pls. 38, 46, 46a.
Silver,	,,	Pls. 37, 46, 46a.
Lead,	,,	Pls. 38, 46, 46a.
Copper,	,,	Pls. 39, 46, 46a.
Wolfram,	,,	Pls. 42, 46, 46a.
Ironstone,	,,	Pls. 41, 46, 46a.
Limestone,	,,	Pls. 41, 46, 46a.
Bismuth,	,,	Pls. 40, 46, 46a.
Molybdenite,	,,	Pls. 42, 46, 46a.
Antimony,	,,	Pls. 40, 46, 46a.

Mineral References: Gold (alluvial), 3255; Lead (Galena), 2862; Copper (Azurite) 212, (Chalcanthite) 1329, (Copper) 1844, (Copper, native) 1999, (Copper Pyrites) 2211, 2212, (Cuprite) 2455, (Malachite) 6282, 6283, (Tenorite) 7728; **Tin** (Cassiterite), 1064-1132; Bismuth (native), 344; Wolfram, 8013-8029; Molybdenite, 6857; Manganese (Wad), 7111; Iron (Ilmenite) 4899, (Iron Pyrites) 5139-5142, (Marcasite) 6506, (Mispickel) 6737-6740, (Pyrrhotite) 7158, (Vivianite) 7922; Graphite, 4596. Other Minerals—Augite, 139; Biotite, 307; Chlorite, 1450-1455; Diamond, 2579; Fluorspar, 2669-2678; Hornblende, 4832-4834; Jasper, 5642; Kaolin, 5686-5688; Marble, 584; Mica, 6559; Natrolite, 6898; Olivine, 6926; Opal (wood), 7007, 7008; Orthoclase, 7045-7047; Penninite, 7064; Sapphire, 2353; Serpentine, 7385-7388; Steatite, 7686-7689; Talc, 7677, 7678; Topaz, 7800-7802; Tourmaline, 7860; Viridite, 7919; Zircon, 8221.

Geological Note: The rocks of Herberton consist of granite, porphyry, and altered sedimentary rock. Tin deposits occurring in the sedimentary rocks are intimately associated with the other rocks in the form of dyke masses. *See* G.S.Q. Pub. Nos. 119 and 192 for details.

Geological Publications: Reports—Nos. 13, 48, 115, 119, 192 Map No. 220. *See under* Geol. Surv. Pub. List for title; *see also under* Q.G.M.J., No. 71, *and* list of maps *under* Department of Mines Publications *and* Supplementary Report List, No. 13

Chamber of Commerce: Sec., J. M. Hollway.

General Information: Consult *Pugh's Almanac; Queensland Post Office Directory; Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Local Newspaper: *Wild River Times.*

Herberton Gold and Mineral Field—(Once Walsh and Tinaroo, in part.)

Situation: *See maps,* Pls. 8, 9, 16, 17, 22. *See under* Herberton. *Cos.* Dagmar, Hodgkinson, Lynd, Nares; *Dist.* Cook. *Cos.* Cardwell, Clarke, Gunnawarra, Wairuna; *Dist.* Kennedy North. Centre about *Lat.* 17° 14′ S., *Long.* 145° 23′ E.

Population: 10,121 (Census 1911).

Proclamation: First and only one, 13th October, 1909, as follows:—Commencing on the Great Dividing Range where it is crossed by the Chillagoe Railway, near the 11-mile peg, from Mareeba Junction, and bounded thence by the Chillagoe Railway south-westerly to Lappa Junction; thence by the Mount Garnet Railway south-easterly to where it crosses the Great Dividing Range; thence by that range southerly to the west boundary of Ellanboro Block near its south-west corner, by part of the west boundary of that block, the west boundaries of Lawn Spring and Wyandotte Blocks, part of the north and west boundaries of Ringwood Park No. 2 Block, the north-west, north-east, and south-east boundaries of Balcoomba Gold Field, the south-west boundary of Lucky Downs Block, the south-east boundaries of Lucky Downs and Jervoise Downs Blocks to the Burdekin River, by that river upwards to the junction of the Dry River; thence by the south, east, again by the south, and by the north-east boundaries of St. John's Rood Block to the Burdekin River, by that river upwards to the north-west corner of Arthur's Plains No. 3 Block, by the north boundary of that block, part of the south-west, the north-west, and north-east boundaries of Hopewell Creek Block, part of the south-west boundary of Lake Lucy No. 1 Block, the south-east boundaries of Lake Lucy No. 1, Lake Lucy No. 2, and Lake Lucy No. 3 Blocks, part of the north-east boundary of Lake Lucy No. 3

Herberton Gold and Mineral Field—*continued:*

Block, the south boundary of Wairuna No. 3 Block, part of the west, the south, and east boundaries of Cromwell Block, part of the east boundary of Wairuna No. 2 Block, and by part of the north boundary of Forest Park to Herkes Creek, by that creek downwards to the Herbert River; thence by a line north-easterly to the Cardwell Range, near the head of Dallachy Creek; thence by that range northerly to the south boundary of Waroora No. 1 Block, by the south and part of the west boundaries of that block to Blunder Creek at the north-east corner of Waroora No. 2 Block; thence by Blunder Creek downwards to Blunder No. 1 Block; thence by that block west and north and the east boundary of Millstream Block north to Millstream Creek, by that creek and the Herbert River downwards to the Wild River, by that river upwards to its confluence with the Dry River; thence by a line north-east to the Coast Range; thence by a line northerly to the south-west corner of portion 67v, parish of Barron, by the west boundaries of portions 67v, 66v, 63v, 62v, 59v, a line north, and the west boundary of portion 130v, by the west, north, and west boundaries of portion 16, the west boundaries of portions 116v, 26, 24, 44, 10, 25, 123, and 34, the Atherton Town sections, the south boundaries of portions 9, 3A, and 57v, and by part of the west boundary of the last-named portion to Middle Creek, by that creek upwards to its head in the Great Dividing Range, by that range northerly about two miles to the head of a small creek westerly from the north-west corner of portion 179, by the small creek and Rocky Creek downwards to the north-west corner of portion 72v, by the north boundary of that portion, the east boundaries of portions 72v and 71v, the north and part of the east boundary of portion 13, the north-west boundaries of portions 51v and 52v, the west and north boundaries of portion 176 to the west side of the Atherton-Mareeba road, by that road northerly to the south boundary of a camping and water reserve, proclaimed in the *Government Gazette*, 1882, part 2, page 487, by the south and west boundaries of that reserve to the west side of the Atherton road, by that road north-westerly to the north-west corner of portion 185; thence easterly by the south boundaries of portions 141, 38v, 39v, 58, 42v, and 43v, parish of Tinaroo, and by the east boundary of portion 43v to the Barron River; thence by a line easterly crossing the Barron River to the southern watershed of Tinaroo Creek and Emerald Creek, by that watershed north-easterly to the eastern watershed of the Barron River, by that watershed and a line northerly to the south-east corner of portion 61v, parish of Cairns, by the south boundary of that portion west and by the left bank of the Clohesy River downwards to the Barron River; thence by a line northerly to Harris Peak; thence by the Great Dividing Range north-westerly (taking in Mount Demi Peak and Mount Spurgeon) to the north-western watershed of the McLeod River, by that watershed south-westerly to a point north from the north-east corner of Talgijah Block, by a line and the east boundary of that block south to the McLeod River, by that river downwards to the Mitchell River, by that river upwards to the north-west corner of Cudgee Cudgee No. 1 Block, by the western, southern, and part of the eastern boundaries of that block to the watershed between the Mitchell and Hodgkinson Rivers; thence by that watershed south-easterly to the Great Dividing Range; and thence by that range southerly to the point of commencement.

AREA: 4,187,800 acres (6,545 sq. miles).

LEASES: Goldmining leases and applications in force, 5; area, 51 acres. Mineral leases and applications, 252; area, 2,865. Miners' Homesteads and applications, 706; area, 3,421 acres (1912).

MINING CENTRES: Boonmoo, California Creek, Coolgarra, Dry River, Emuford, Glen Linedale, Gurrumba, Herberton, Irvinebank, Mareeba Goldfield, Montalbion, Mt. Carbine, Mt. Fraser, Mt. Garnet, Mt. Lewis, Mt. Molloy, Mt. Spurgeon, Nettle's Creek, Newellton (Silver Valley), Nymbool, Stannary Hills, Watsonville, *which see.*

MINERAL STATISTICS: *See under* Herberton.

GEOLOGICAL PUBLICATIONS: *See under* Herberton.

WARDEN AND INSPECTOR OF MINES: Both stationed at Herberton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

GENERAL INFORMATION: *See under* Herberton.

Herberton and Bradlaugh Gully (between), S.S.W. of Atherton Rail. Stn. *Min.Ref.* Opal (wood), *see* 7008.

—— Deep Lead. *See* Deep (Tin) Lead, Herberton.

Hercules Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

Hercynite. *Syn.* Iron spinel. *Compo.*, Aluminate of iron. *Colour*, black. *Streak*, dark green. *H.* = 7·5-8. *Sp.gr.* = 3·9.

4815. ——. Truxillo, Cairns-Georgetown Road, 15 miles S.byW. of Fossilbrook, 53 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line). *Co.* Tate; *Dist.* **Cook**. *Analysis:* Show Uranium absent. *Ref.* A.R., p. 113 (1907).

Hero Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— Silver Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 49; Galena, 2985; Ironstone, 5574; Minium, 6613; Native Silver, 7558.

Hessonite. *Syn.* Essonite. *See under* Garnet.

Hessite. *Syn.* Telluric Silver. *Compo.*, Telluride of silver. *Colour*, lead-grey, steel-grey. Sectile, metallic. *H.* = 2-3·5. *Sp.gr.* = 8·3-8·6. *Contents (max.)*, Silver 63 per cent. Gold often present.

4816. ——. *Assoc.with* Altaite and Gold, in quartz and calcite. *Loc.* Gt. Eastern No. 2 S. Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Assay:* Silver = 0·70 per cent. = 228 oz. 13 dwt. per ton; Gold = 0·09 per cent. = 29 oz. 7 dwt. 20 gr. per ton. *Ref.* G.S.Q. Pub. 196, p. 25 (1905).

4817. ——. *Assoc.with* Altaite, in quartz reef. *Loc.* Gt. Eastern No. 2 S. Mine, Gympie Goldfield (*ante*). *Assay:* Silver = 50·339 per cent. = 16,443 oz. 4 dwt. 16 gr. per ton; Gold = 5·049 per cent. = 1,649 oz. 5 dwt. 2 gr. per ton. *Ref.* G.S.Q. Pub. 196, p. 25 (1905).

4818. ——. *Assoc.with* Gold, in quartz. St. Patrick's Reef, Gympie Goldfield (*ante*). *Assay:* Silver = 57·5 per cent. = 18,782 oz. 7 dwt. 12 gr. per ton; Gold = 0·093 per cent. = 30 oz. 7 dwt. 13 gr. per ton; Tellurium, 25 per cent. *Ref.* A.R., p. 154 (1908).

Heulandite. *Compo.*, Hyd. silicate of alumina and lime. *Colour*, white, brick-red, etc. *Lustre*, Vitreous, inclining to pearly. A zeolite. *H.* = 3·5-4. *Sp.gr.* = 2·2.

4819. ——. *Assoc.with* Calcite and Quartz. *Loc.* Plant's Shaft, Golden Gate Gold Mines, Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* B.D.

4820. ——. As a lining in goedes in granite. *Loc.* Enoggera, 6½ miles W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.M.

Heussler's Bore, Tingalpa. *See under* Coal Bores.

Hibernia Lease (16), Normanby Goldfield. *Min.Ref.* Gold, *see* 4121.

Hickey's Reef, Norton Goldfield. *Min.Ref.* Calcite, *see* 533; Galena, 3051; Gold, 4279; Iron Pyrites, 5378; Zinc Blende, 8195.

—— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1092A; Fluorspar, 2674.

Hickson's Cr. Bore. *See under* Artesian Bores. No. 262.

Hidden Treasure Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3704; Iron Pyrites, 5033.

—— —— Mine, Mt. Morgan (Crocodile) Goldfield. *Min.Ref.* Apophyllite, *see* 85; Calcite, 548; Gold, 4366; Iron Pyrites, 5421; Limonite, 5922.

—— —— ——, Yatton Goldfield. *Min.Ref.* Calcite, *see* 512; Gold, 4175.

—— —— Lease (165), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1241; Chrysocolla, 1527; Galena, 2964; Hematite, 4745; Magnetite, 6018; Malachite, 6300; Manganese-dioxide, 6438; Mispickel, 6751; Silver (native), 7556; Zinc Blende, 8157.

—— —— East Lease (166), Kangaroo Hills Mineral Field. *Min.Ref.* Azurite, *see* 221; Cerussite, 1242; Galena, 2965, 2966; Ironstone, 5558; Kaolin, 5690; Lithomarge, 5712; Manganese dioxide, 6439; Steatite, 7692.

—— Valley Tin Lodes, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1163.

High Bar Reef, Old Homestead Diggings. *Min.Ref.* Gold, *see* 4070; Mispickel, 6750.

Higham Reef, Old Homestead Diggings. *Min.Ref.* Gold, *see* 4071; Iron Pyrites, 5272.

Highfield Sub-artesian Bore. *See under* Artesian Bores. No. 140.

Highland Chief Reef, Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4099A; Limonite, 5883B; Malachite, 6317A.

—— Mary P.C., Bee Cr. Diggings. *Min.Ref.* Copper Pyrites, *see* 2252B; Galena, 3005; Gold, 4100; Iron Pyrites, 5292; Limonite, 5883C; Malachite, 6318; Siderite, 7411B; Zinc Blende, 8166A.

—— —— 1 E. Mine, Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4097.

—— —— M.L. (531), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1507; Copper Pyrites, 2094; Limonite, 5785; Malachite, 6146; Redruthite, 7245; Turgite, 7884.

Highland Mary Centre, Croydon Goldfield. *Includes* Caledonia and Highland Mary Reefs. *Min.Ref.* Argentine, *see* 563; Gold, 3524; Iron Pyrites, 4955, 4956.

—— —— Block Shaft, Croydon Goldfield. *Min.Ref.* Argentine, *see* 563; Iron Pyrites, 4956.

—— —— Bores (3), Croydon Goldfield. *See under* Gold Bores. Diagrammatic Section of No. 1 in Annual Report of Department of Mines, 1891.

—— —— Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3524. *See also under* Q.G.M.J., No. 67.

Highlands Bore. *See under* Artesian Bores. No. 227.

Hilary Bore. *See under* Artesian Bores. No. 333.

Hilda Group of Copper Mines, Cloncurry. *Includes* Comet M.L., Hilda M.L., Mascotte M.C., and Hermit M.C. *Min.Ref.* Azurite, *see* 162; Calcite, 458; Copper Pyrites, 2085-2087; Cuprite, 2402; Ironstone, 5490; Limonite, 5770, 5771; Malachite, 6127-6129; Manganese-dioxide, 6391; Redruthite, 7232, 7233; Tile Ore, 2514, 2515.

—— M.L. (242), Cloncurry. *Min.Ref.* Calcite, *see* 457A; Copper Pyrites, 2085A; Limonite, 5771; Malachite, 6128; Manganese-dioxide, 6391; Redruthite, 7232.

Hillgrove Stn. *Lat.*, 19° 40′ S.; *Long.*, 145° 51′. Basalt R., N.W. of Dalrymple. *Min.Ref.* Limestone, *see* 656.

Hill's Bore. *See under* Artesian Bores. No. 211.

Hillsborough (8-Mile) Mining Centre, N.N.E. of Ravenswood. *Includes* Premier, J.R.D., Flying Cloud, Budgeree Reefs. *Min.Ref.* Copper Pyrites, *see* 2222A; Galena, 2925; Gold, 4012, 4013; Iron Pyrites, 5237.

Hillside Claim, Black Ridge, Clermont. *Min.Ref.* Gold (alluvial), *see* 3309; Iron Pyrites, 5321.

Hilton Extd. L. (638), Gympie Goldfield. *Min.Ref.* Gold, *see* 4450.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4510.

Hinchinbrook Is., Halifax Bay, 9 miles N.N.W. of Lucinda Point. *Lat.*, 18° 20′ S.; *Long.*, 146° 20′ E. *Min.Ref.* Magnetite, *see* 6004.

GEOLOGICAL NOTE: About one-third of the island at the south end is composed of granites, the other portion being made up of altered sedimentary rocks.

Hit or Miss (Lake View) Bore. *See under* Artesian Bores. No. 154.

—— —— Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

—— —— Mine, nr. Kingsborough, Hodgkinson Goldfield. *Min.Ref.* Galena, *see* 2760; Gold, 3747.

—— —— ——, Mt. Morgan (Crocodile) Goldfield. *Min.Ref.* Gold, *see* 4367; Iron Pyrites, 5422.

—— —— Reef, Charters Towers. *Min.Ref.* Gold, *see* 3954; Iron Pyrites, 5171.

—— —— ——, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

—— —— Tin Mine, Trevethan Cr., Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 826.

Hobson Mine, ½-mile N.W. of Calcifer Rail. Stn. (Chillagoe line). *Min.Ref.* Copper Ore, *see* 2027B.

Hodgkinson Co. Cook Dist. *See map*, Pl. 8.

Hodgkinson Goldfield (now included in the Chillagoe Gold and Mineral Field). *See maps*, Pls. 8, 9, and 22.

Situation: The township of Thornborough is 19 miles (by road) N.N.W. of Dimbullah Rail. Stn. (Chillagoe line), 92 miles (by rail and road) W. of Cairns. *Cos.* Dagmar, Hodgkinson, Lynd, and Nares; *Dist.* Cook. *Lat.*, 16° 55′ S.; *Long.*, 145°.

Discovery: Gold was found in 1875, but the "rush" set in at the beginning of April, 1876.

Population (included in Chillagoe G. and M. Field).

Rainfall: Yearly average, 1902-1907, 37·62 inches. Wet Days, 54.

Leases: *See* Chillagoe G. and M. Field.

Area: 1,184,000 acres (1,850 sq. miles).

Proclamation of Field: First gazetted, 15th June, 1876; last alteration, 25th May, 1881. Superseded by Proclamation of 13th October, 1909, notifying this field to be included in the Chillagoe Gold and Mineral Field, *which see.*

Principal Mining Centres: Kingsborough, Northcote, Thornborough, Wolfram Camp, Woodville, and Mt. Mulligan Coalfield, *which see.*

Mineral Statistics:

Gold,	*see tables and diagram,*	Pls. 36, 46, 46a, 47.
Molybdenite,	*see tables,*	Pls. 42, 46, 46a.
Scheelite,	,,	Pls. 42, 46, 46a.
Wolfram,	,,	Pls. 42, 46, 46a.
Bismuth,	,,	Pls. 40, 46, 46a.
Antimony,	,,	Pls. 40, 46, 46a.
Silver,	,,	Pls. 37, 46, 46a.
Tin,	,,	Pls. 38, 46, 46a.

Statistical Notes: Greatest recorded annual gold yield (1878), 35,567 fine oz.; value, £151,079. Smallest recorded annual gold yield (1891), 540 fine oz.; value, £2,294. The first recorded gold yield of the Hodgkinson Goldfield (1878) was returned at 35,567 oz.; from that to the year 1892 the yield gradually declined till in 1891 it reached 540 oz. From 1893 to 1904, however, the yield increased from 1,560 to 4,500 oz.; but in subsequent years it fell again. Total yield of gold to end of 1912, 234,298 fine oz.; value £995,234. This is equal to 1·33 per cent. of the whole gold production of the State. The total yield of Antimony to the end of 1912 was 2,697 tons; Bismuth, 47 tons; Molybdenite, 563$\frac{1}{2}$ tons; Scheelite, 10$\frac{3}{4}$ tons; Wolfram, 2,912 tons. This is equal to 64·50 per cent. of the State's total production of Antimony, 6.75 per cent. of Bismuth, 53.35 per cent. of Scheelite, and 34.88 per cent. of Wolfram.

Mineral References: **Gold** (alluvial), *see* 3215, (reef) 3746-3765; Lead (Galena), 2742, 2760-2765; Copper (Copper carbonate), 1888, (Copper Pyrites) 2142, 2152; Bismuth (native), 330; Antimony (Cervantite), 1304a, 1305, (Stibnite) 7618-7626; Scheelite, 7342a; Zinc Blende, 8080; Iron (Hematite), 4706, (Iron Pyrites) 5034, 5035, 5056a-5059, (Mispickel) 6684-6686. Other Minerals: Calcite, 483; Epsomite, 2613.

Geological Note: The stratified rocks of the Hodgkinson Goldfield consist of clay shales, greywackes, grits, and conglomerates. These are intersected by immense dykes of rock whose original constituents have been replaced by silica. A large number of quartz reefs traverse the strata, and are divided into two systems—those parallel with the strike of the rocks and those at right angles.

Geological Publications: Reports—Nos. 16, 117. *See under* Geol. Surv. Pub. List for titles. *See also under* Gov. Ming. Jour. Special Reports, No. 116.

Warden: Stationed at Chillagoe. Inspector of Mines: Stationed at Herberton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M. under Chillagoe Mineral Field.

Crushing Mills: Twelve batteries (122 stamps). Several mills idle. Charges, 12s. to 20s. per ton.

General Information: Consult *Pugh's Almanac; Queensland Post Office Directory; Queensland Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Hodgkinson Extended Goldfield. Situation, *see* Hodgkinson Goldfield. Proclamation, First (and only) gazetted, 26th August, 1886. Now included in Chillagoe Gold and Mineral Field.

—— River. Heads in the country to the N.W. of Northcote, flows N.W. to join the Mitchell R. Length, about 70 miles. *Min.Ref.* Gold (alluvial), *see* 3215. NOTE: Hodgkinson Goldfield is situated near the head of this river, the old Wolfram Camp being on one of its branches.

Hodgson's Cr., 6 miles W.S.W. of Cambooya. *Min.Ref.* Coal, *see* 1624.

Hogan's Reef, Green Hills Goldfield. *Min.Ref.* Gold, *see* 3744.

Holy Joe Bores. *See under* Artesian Bores. Nos. 161, 255.

Home Cr. Run Bores. *See under* Artesian Bores. No. 292.

—— Paddock Sub-artesian Bore. *See under* Artesian Bores. No. 432.

—— Rule Mine, Woodville, Hodgkinson Goldfield. *Min.Ref.* Bismuth (native), *see* 330; Gold, 3763; Stibnite, 7625.

—— —— Tin Claim, Annan Tinfield. *Min.Ref.* Cassiterite, *see* 821.

—— —— —— Mine, Herberton. *Min.Ref.* Bismuth (native), *see* 344; Cassiterite, 1093.

Homeboin Bore. *See under* Artesian Bores. No. 290.

Homebush, 10 miles S.S.W. of Mackay. *Min.Ref.* Graphite, *see* 4600.

—— Bore. *See under* Artesian Bores. No. 291.

Homestead (3 miles W. of), 49 miles (by rail and road) W.S.W. of Charters Towers. *Min.Ref.* Cervantite, *see* 1308; Stibnite, 7646, 7647.

—— Bore. *See under* Artesian Bores. No. 363.

Homestead Prov. Goldfield—

SITUATION: *See maps*, Pls. 16, 17. Forty-six miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. Centre about *Lat.* 20° 22′ S., *Long.* 145° 40′ E.

DISCOVERY: In 1889.

MINING CENTRES: Old and New Homestead Diggings, *which see.*

MINERAL STATISTICS: Included in Charters Towers gold returns.

MINERAL REFERENCES: Gold (alluvial), 3273, (reef) 4066-4072; Lead (Galena), 2952, 2953; Copper (Copper carbonate), 1915, (Copper Pyrites) 2237, (Redruthite) 7297; Antimony (Cervantite), 1307A, (Stibnite) 7646, 7647; Iron (Iron Pyrites), 5271, 5273, (Mispickel) 6750.

GEOLOGICAL NOTE: The prevailing rock is granite, in which there are several bands of schist and a number of gold-bearing reefs. *See* G.S.Q. Pubs. 73 and 77 for details.

GEOLOGICAL PUBLICATIONS: Report—No. 73 (1891). *See under* Geol. Surv. Pub. List for title.

WARDEN and INSPECTOR OF MINES: Both stationed at Charters Towers.

Homeward Bound Group of Copper Mines; Cloncurry. *Includes* Flying Dutchman, King John, Baroondah, Musical Union, Burleigh, Copper Quarry, and Raleigh Heights M. Leases, and Homeward Bound Extd. M.C. *Min.Ref.* Azurite, *see* 155; Native Copper, 1978; Cuprite, 2391; Gold, 3455; Malachite, 6081.

—— —— Extended M.C. (331), Cloncurry. *Min.Ref.* Azurite, *see* 155; Cuprite, 2391; Gold, 3455; Malachite, 6081; Native Copper, 1978.

—— —— (Mt. Hope) Reef, Cania Goldfield. *Min.Ref.* Gold, *see* 4356; Ironstone, 5626.

—— —— Centre, Croydon Goldfield. *See* Pl. 26. *Includes* Homeward Bound, Waterfall, and Pride of the Hills Reefs. *Min.Ref.* Gold, *see* 3525-3528; Graphite, 4581; Ironstone, 5499; Manganese-dioxide, 6393; Zinc Blende, 8059.

—— —— Mine, Gilberton. *Min.Ref.* Gold, *see* 3830.

—— —— Reef, Black Snake. *Min.Ref.* Gold, *see* 4387; Silver, 7534.

—— —— ——, Copperfield. *Min.Ref.* Gold, *see* 4157.

—— —— ——, Croydon Goldfield. *Min.Ref.* Gold, *see* 3525; Ironstone, 5499; Manganese-dioxide, 6393.

—— —— ——, Gebangle. *Min.Ref.* Gold, *see* 3576A.

—— —— ——, Kingsborough, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3748.

Honest Bob's Mine, New Zealand Gully, Cawarral Goldfield. *Min.Ref.* Limonite, *see* 5912.

Hong Kong Bore. *See under* Artesian Bores. No. 334.

Hoolah (Lillyman's) Bore. *See under* Artesian Bores. No. 270.

Hoomooloo Goldfield. *See* Moondilla Goldfield.

Hooker (Brian). Was appointed Southern Mineralogical Lecturer in October, 1886, and was stationed in Gympie. His first Annual Report was for the year 1887, his next one was for 1888. There appears to be no record of the time he left the service.

Hooper's Luck Shaft, Nanango Goldfield. *Min.Ref.* Gold, *see* 3624B.

Hope Colliery, Clermont Coalfield. The mine was opened in 1894. *Min.Ref.* Coal, *see* 1669.

—— Gold Mine, Charters Towers Goldfield. *Min.Ref.* Gold, *see* 3907; Iron Pyrites, 5172; Zinc Blende, 8124.

—— Reef, Tabletop, Croydon Goldfield. *Min.Ref.* Anglesite, *see* 12B; Gold, 3544; Massicot, 6520; Pyromorphite, 7137.

—— ——, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— ——, Millchester. *Min.Ref.* Gold, *see* 3955; Iron Pyrites, 5173.

—— Silver Mine, Argentine Silver Field. *Min.Ref.* Iron Ochre, *see* 4916.

—— Tin Mine, Emu Cr. Tin Mines. *Min.Ref.* Cassiterite, *see* 932.

Horn Island Goldfield—

SITUATION: *See maps,* Pls. 8, 9. Three miles S.E. of Thursday Is., Torres Strait. *Co.* Torres; *Dist.* Cook. Centre, about *Lat.*, 10° 35′ S., *Long.*, 142° 18′ E.

DISCOVERY: In 1894, by Smyth and party.

POPULATION: Less than 20.

PROCLAMATION OF FIELD: First gazetted, 31st August, 1894; Last, 8th November, 1897, as follows:—Adjacent to Cape York, on the north-west coast of Queensland.

AREA: 12,800 acres (20 sq. miles).

LEASES: Goldmining leases in force, nil; Miners' homesteads in force, 2; area, 22 acres (1912).

MINERAL STATISTICS: Included in "Other Goldfields."

MINERAL REFERENCES: Gold (alluvial) 3239, (reef) 3804-3823; Copper (Copper Pyrites) 2179, 2180; Lead (Galena), 2815-2824; Zinc Blende, 8091-8094; Iron (Iron Pyrites) 5088-5101, (Mispickel) 6707, (Scorodite) 7368, 7369.

GEOLOGICAL NOTE: The prevailing rock is an aplite granite, in which there are numerous gold-bearing quartz reefs. Quartzites of indefinite age occur to the north-east of the field, but evidently do not contain reefs. Between the outcrops of granite and quartzite an area of alluvium obscures the junction of the two rocks. *See* G.S.Q. Pub. No. 112 and 180 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 112 (1896), 180 (1902). *See under* Geol. Surv. Pub. List for title.

WARDEN: Stationed at Thursday Island. INSPECTOR OF MINES: Stationed at Croydon.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— —— Mine, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3821.

Horn Silver. *Syn.* Cerargyrite, *which see.*

Hornblende. *Compo.*, Silicate of alumina, iron, lime, and magnesia. *Colour*, black or greenish black. *Lustre*, vitreous. *Varieties*, Actinolite, Asbestos, Basaltic Hornblende, Tremolite. *H.* = 5-6. *Sp.gr.* = 2·9-3·4.

4821. —— (greenish black). Strathfield Stn., *viâ* Mackinlay, 55 miles S.E. of Cloncurry. *Co.* Allison; *Dist.* **Burke.** *Ref.* B.D.

4822. ——. *Assoc.with* Actinolite, in syenite. *Loc.* Broken Hill Mine, Cloncurry, about 480 miles (by rail) W.byS. of Townsville. *Co.* Beaconsfield; *Dist.* Burke.

4823. ——. *Assoc.with* Gold and Iron Pyrites. *Loc.* Great Freehold Mine, Rocky Cr., Mt. Drain Diggings, 7 miles W. of Mt. Perry. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M. and Q.M.

4824. Hornblende. *Assoc.with* Felspar, Olivine, and Quartz, in altered sed. rock. *Loc.* Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn., 38 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. 1 (1890).

4825. ——. *Assoc.with* Biotite and Orthoclase, in syenitic granite. *Loc.* Edisvold Goldfield, Burnett R., 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 43, p. 1 (1887).

4826. —— (crystals). *Assoc.with* Olivine, in basalt. *Loc.* Endeavour R., Cooktown, 1,050 miles N.W. of Brisbane. *Co.* Banks; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

4826A.——. *Assoc.with* Orthoclase, in syenitic rock. *Loc.* Mt. Browning, nr. Mt. Amos, 20 miles S. of Cooktown. *Co.* Banks (*ante*). *Ref.* G.S.Q. Pub. 66, p. 8 (1891).

4827. ——. Oaky Cr., Bakerville, 4 miles W. of Watsonville, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

4828. —— (hypidiomorphic crystals), in granite. *Loc.* Harper's Siding, 7 miles (by rail) S.E. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

4829. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Luxton's Mine, Wet Cr., trib. of California Cr., 3 miles N.E. of Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd (*ante*). *Assay:* Gold = 150 oz. per ton. *Ref.* G.S.Q. Pub. 119, p. 42 (1897).

4830. ——. Klondyke Battery, 12 miles W. of Coen, 57 miles (by road) N.N.W. of Port Stewart. *Co.* Sidmouth; *Dist.* Cook. *Ref.* L.C.B.

4830A.——. Spring Creek, Main Range, 6 miles E. of Evergreen, 20 miles N.N.E. of Jondaryan Rail. Stn. (Western line). *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* O.R. (1910).

4831. ——. *Assoc.with* Iron Pyrites, Mispickel, Scorodite, Cassiterite, and Zinc Blende, in slate. *Loc.* Beacroft's Workings, Sundown Cr., 12 miles S.W.byW. of Ballandean Rail. Stn., 26 miles (by rail and road) S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 191, p. 23 (1904).

4832. ——. *Assoc.with* Mispickel, Steatite, Chlorite, Biotite, and Orthoclase, in lode. *Loc.* Gt. Northern Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns-Herberton line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 3 (1883).

4833. ——. Monarch Tin Mine, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 5, p. 62 (1900).

4834. ——. St. Patrick's Tin Mine, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 5, p. 62 (1900).

4835. ——. Happy Valley, about 40 miles (by road) S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* O.R.

4836. ——. As greenish-black cleavage masses, in diorite. *Loc.* Marengo Cr., 19 miles S. of Bowen. *Co.* Herbert (*ante*). *Ref.* B.D

4837. —— (crystals), in porphyry. Parrot Cr., Bowen R., 60 miles S.S.W. of Bowen. *Co.* Drake; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 4, p. 19 (1879).

4838. ——. *Assoc.with* Gold, Diamond, Sapphire, Spinel, Garnet, Zircon, Topaz, Amethyst, Cairngorm, Chalcedony, Jasper, Tourmaline, Rutile, Ilmenite, Magnetite, and Magnesite, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Crs., Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton. *Cos.* Clermont and Platagenet; *Dist.* Leichhardt. *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), 172 (1902).

4839. ——. In gabbro. Peak Vale, 18 miles S.S.W. of Clermont. *Co.* Clermont (*ante*). *Ref.* B.D.

4840. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Camboon Mine, Upper Dawson River, 85 miles W.N.W. of Mt. Perry Rail. Stn. *Co.* Dawson; *Dist.* Leichhardt. *Ref.* Q.M.

4841 ——. *Assoc.with* Garnet and Ilmenite, as inclusions in basaltic dyke. *Loc.* Lowood, 45 miles (by rail) W. of Brisbane (Brisbane-Valley Br. line). *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 175, p. 12 (1902).

4842. ——. In quartz. Waterworks Road, Enoggera, 6 miles (by rail) W. of Brisbane. *Co.* Stanley; *Dist.* Moreton.

4843. ——. *Assoc.with* Orthoclase and Biotite, in granite. *Loc.* Norton Goldfield, 33 miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 5 (1885).

4844. ——. *Assoc.with* Felspar, in quartz. *Loc.* Miriam Vale, 43 miles (by rail) S.E.byS. of Gladstone (North Coast line). *Co.* Flinders; *Dist.* Port Curtis. *Ref.* L.C.B.

4845. ——. *Loc.* Native Cat Cr., 6 miles W. of Stanwell Rail. Stn (Central line), 22 miles (by rail and road) W.S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis.

4846. ——. Stewart's Cr., 1 to 3 miles W.N.W. of Stanwell Rail. Stn., 16 to 20 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

4847. ——. As rock inclusion in syenite. *Loc.* Railway Cutting, nr. Moonmera Rail. Stn. (Mount Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 195 (1904).

4848. —— (crystals). Grey Ranges, S. Western Queensland, nr. border of N.S.W. Warrego and Gregory South Dists. *Ref.* G.S.M.

4849. ——. *Assoc.with* Iron Pyrites and Felspar. *Loc.* Alma Reef, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 52, p. 8 (1889).

—— **Actinolite** (*var.*). Occurs as long, slender, glassy prisms of greenish colour.

4849A. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Limonite, in gossan and schist. *Loc.* Melba M.L. (319), Melba Group, Corella R., 39 miles W.S.W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, p. 210 (1908).

4850. —— ——. *Assoc.with* massive Hornblende. *Loc.* Broken Hill Mine, Cloncurry, 480 miles (by rail) W.byS. of Townsville. *Co.* Beaconsfield; *Dist.* Burke.

4851. —— ——. *Assoc.with* Redruthite, Tile Ore, and Malachite, in ironstone. *Loc.* Wanderer M.L. (622), Eclipse Group, N.W. of Donaldson, 68 miles N.byW. of Cloncurry. *Co.* Granada; *Dist.* Burke *Ref.* G.S.Q. Pub. 215, p. 357 (1908).

4852. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Limonite, Calcite, Chlorite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group, 1½ mile N.N.W. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

4853. —— ——. *Assoc.with* Malachite and Limonite, in quartz and chloritic schist. *Loc.* Tulip No. 1 E.M.C. (180), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 106 (1908).

4854. —— ——. Lower Flinders. *Dist.* Burke. *Ref.* G.S.M.

4855. —— ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Magnetite, Mispickel, Bismuth (native), Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Erythrine, Viridite, Calcite, Chalcedony, and Epidote, in slate and hornblende rock. *Loc.* Biggenden Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn., 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 60 (1890), 173, p. 2 (1902), and 194 (1904), and G.S.M.

4856. —— ——. *Assoc.with* Andradite Garnet. *Loc.* Mt. Hastings Mine, 2 miles S.E. of Mt. Biggenden, 5 miles S.byW. of Degilbo Rail. Stn. *Co.* Cook (*ante*). *Ref.* G.S.M.

4857. —— ——. Cabbage-tree, S. Flanks of Dawes Range, 40 miles N.N.W. of Mt. Perry Rail. Stn., 54 miles S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. *Ref.* L.C.B.

4858. —— —— (crystals), in schist. *Loc.* Mungai Copper Lodes, 12 miles (by road) W. byN. of Mt. Perry, 79 miles (by rail and road) W.S.W. of Bundaberg (Mt. Perry line). *Co.* Yarrol (*ante*). *Ref.* G.S.Q. Pub. 21, p. 10 (1885).

4859. —— ——. Calcifer Rail. Stn (Chillagoe line), 132 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

4860. —— ——. *Assoc.with* Galena, Cerussite, Massicot, Anglesite, and Manganese-dioxide. *Loc.* Macrossan Mine, between Cathedral Range and Arbinjoe Cr., 2 miles E. of Chillagoe Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Assays: See* No. 28. *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

4861. —— ——. Eclipse Mine, Muldiva Silver Mines, 6 miles S.W.byS. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

4862. —— —— (asbestiform). Outcrops 2 ft. wide. *Loc.* 1 mile N. of Limestone Extd. Copper Mine, 80 miles S. of Cloncurry. *Co.* Merlin; *Dist.* **Gregory North.** *Ref.* B.D.

4863. Hornblende (Actinolite). In diorite. *Loc.* Sunburst 2 E. Mine, Charters Towers, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* **Kennedy North.** *Ref.* G.S.M.

4864. —— ——. *Assoc.with* Epidote, in garnet rock. *Loc.* Crow's Nest (Ravensbourne), 34 miles (by rail) N. of Toowoomba. *Co.* Cavendish; *Dist.* **Moreton.**

4865. —— ——. *Assoc.with* Copper Pyrites, Epidote, and Magnetite, in garnet rock. *Loc.* Blue Bag Shaft, Glassford Cr. Copper Mine, 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne Valley line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pubs. 150, pp. 5-7 (1900), and 194, pp. 28-30 (1904).

4866. —— ——. *Assoc.with* Malachite. *Loc.* Mt. Alma Stn., Calliope R., 30 miles W.S.W. of Gladstone. *Co.* Clinton (*ante*).

4867 —— ——. Serpentine Hill, nr. Johannsen's Caves, 16 miles N.byW. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.M.

4868. —— ——. Old Workings, 5-Mile or Callide Cr. Copper Mine, Kroombit, 50 miles S.S.W. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 27 (1904).

4869. —— ——. *Assoc.with* Magnetite. *Loc.* Mt. Nelson, nr. Mt. Morgan, 24 miles (by rail) S.S.W. of Rockhampton. *Co* Raglan (*ante*).

4870. —— ——. *Assoc.with* Garnet, Epidote, and Hematite. *Loc.* Yorkey's Surprise G.M. Lease, Yorkey's Goldfield, Running Cr., 9 miles N. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.**

4871. —— ——. Smithfield United Gold Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.M.

4872. —— **Asbestos** (*var.*) (superior). Kandanga (?) Cr., trib. of Mary R., 10 miles S. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Analysis:* Moisture and loss on ignition, 1·8 per cent.; Silica (SiO_2), 57·4 per cent.; Alumina (Al_2O_3), 1·6 per cent.; Iron Oxide (as Fe_2O_3), 3·4 per cent.; Lime (CaO), 13·1 per cent.; Magnesia (MgO), 22·8 per cent.—100·1 per cent. *Ref.* A.R. p. 128 (1907).

4872A. —— ——. In small quantities, mixed with quartz. *Loc.* 316-ft. level, Block 1292 Mine, Gympie Goldfield. *Co.* March; *Dist.* Wide Bay. *Part Analysis:* Moisture, 0·5 per cent.; loss on ignition, 8·2 per cent.; Silica, 50·2 per cent.; Iron oxide, 9·1 per cent.; Magnesia, 11·0 per cent. *Ref.* A.R., p. 308 (1911).

See also Asbestos, separate heading. *Min.Ref.* 105, &c.

4873. —— **Basaltic Hornblende** (*var.*). Occurs as black cleavable masses (inclusions) in basalt. *Loc.* Peak Vale Stn., 18 miles S.S.W. of Clermont, 247 miles (by rail and road) W.byN. of Rockhampton. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* B.D.

4874. —— **Tremolite** (*var.*). Paisley Silver Mine, Muldiva, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M. and P.R.S.Q., vol. 15, p. 62 (1900).

4875. —— ——. Coolgarra Tin Mines, 12 miles (by coach) N.E.byN. of Mt. Garnet, Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

4876. —— ——. Will's Shaft, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M.

Hornstone. *Var. of* Chalcedony, *which see.*

Horse Cr. Group of Copper Mines, Horse Cr., Cloncurry. *Includes* Horse Cr. M.L., 1 and 2 N., and 1 and 2 S. M. Leases. *Min.Ref.* Azurite, *see* 208; Cuprite, 2452; Malachite, 6272.

—— —— M.L. (220, etc.), Cloncurry. *Min.Ref.* Azurite, *see* 208; Cuprite, 2452; Malachite, 6272.

—— ——, Cape York Peninsula. *Min.Ref.* Gold, *see* 3660A.

—— ——, trib. of Cloncurry R., Cloncurry. *Includes* Horse Cr. Group of Copper Mines. *Min.Ref.* Azurite, *see* 208; Cuprite, 2452; Malachite, 6272; Manganese-dioxide, 6428; Psilomelane, 7089; Wad, 7110.

—— —— Bore. *See under* Artesian Bores. No. 432.

Horse Creek Opal Field. *See maps*, Pls. 20, 21. 87 miles S. of Winton, Opalton Mineral Field. *Includes* Craig's, Poison, and Carlyle's Mines.

DISCOVERY: Opal discovered in 1888.

MINERAL REFERENCES: Opal (precious), *see* 6940A.

GEOLOGICAL NOTE: *See under* Opalton Mineral Field.

GEOLOGICAL PUBLICATION: Report No. 177 (1902). *See* Geol. Sur. Pub. List for title.

WARDENS: Stationed at Longreach and Winton; INSPECTOR OF MINES: Stationed at Rockhampton.

—— Paddock Bore. *See under* Artesian Bores. No. 402.

—— Pocket Spur, 9 miles S.W. of Nerang. *Min.Ref.* Tripolite, *see* 7033A.

Horseshoe M.L. (451), Cloncurry. *Min.Ref.* Hematite, *see* 4683; Limonite, 5758; Malachite, 6109.

—— Bend Mine, Paradise Goldfield. *Min.Ref.* Gold, *see* 3611.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 124.

Horsley (S.), Inspector of Mines. Report on New Einasleigh Copper Mine, Q.G.M.J., vol. 11, p. 222 (1910). On Oaks Goldfield, Q.G.M.J., vol. 11, p. 257 (1910).

Horton Vale (Phillott's) Bore. *See under* Artesian Bores. No. 235.

Hospital Hill (gully S. of), Hamilton Goldfield. *Min.Ref.* Sillimanite, *see* 7423.

Hot Springs. *See* Innot Springs, Einasleigh Springs, Musgrave Springs.

Howard (on North Coast line), 14 miles (by rail) N.W.byN. of Maryborough. *Co.* Cook; *Dist.* Wide Bay. *See* Pls. 4, 5, 24. *Lat.*, 25° 18′ S.; *Long.*, 152° 36′ E.

RAILWAY BASE for some of the Collieries of the Burrum Coalfield.

MINERAL REFERENCES: Clay Ironstone, *see* 1593; Coal, 1807. *See also under* Gov. Ming. Jour., Report No. 57.

GEOLOGICAL NOTE: The rocks consist of sandstones, shaly sandstones, and shales belonging to the Burrum Series (Cretaceous). Several seams of coal exist in the locality, and are now being worked. The coal is of first-class quality for steaming purposes, and also makes a hard, dense coke. Coal was discovered at Howard by A. Steley in 1867. *See* G.S.Q. Pub. No. 170 for details.

—— (Burrum) Bores. *See under* Coal Bores.

—— Colliery, Burrum Coalfield. *Min.Ref.* Coal, *see* 1807. *See also under* Govt. Ming. Jour., Report No. 57.

Howard's Gold Mine, Thane's Cr. Goldfield. *Min.Ref.* Gold, *see* 3871.

Howes's P.P.A. (267), Mungin Cr., Palmer Goldfield. *Min.Ref.* Gold, *see* 3691.

Howitt Co. Burke Dist. *See map*, Pl. 20.

Hueloa Bore. *See under* Artesian Bores. No. 255.

Hugden Sub-artesian Bore. *See under* Artesian Bores. No. 388.

Hughenden, 236 miles (by rail) S.W.byW. of Townsville. *Lat.*, 20° 50′ S.; *Long.*, 144° 11′ E. *Min.Ref.* Cimolite, *see* 1538; Coal, 1595; Muscovite, 6886; Selenite, 4638. *See also under* Govt. Ming. Jour., Reports Nos 91, 92, and Supplementary Report List, No. 34.

GEOLOGICAL NOTE: The rocks in the vicinity of the town belong to the Rolling Downs Formation (Lower Cretaceous), those to the north and east being Desert Sandstone (Upper Cretaceous), and basalt (Tertiary). Hughenden is situated near the eastern edge of the great Artesian Water Basin.

MINERAL NOTE: *See under* Prairie, Warreah, Flinders River, Coalbrook, and Galah Gorge for references to coal, and Mount Emu Plains for references to gold.

—— Bores. *See under* Artesian Bores. Nos. 26, 122, 271, 293.

Hughes's Leader, Pentland, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4056; Iron Pyrites, 5264.

Humboldt Co. Leichhardt Dist. *See maps*, Pl. 10.

Humeburn Co. Warrego Dist. *See map*, Pl. 18.

Humphrey and Co.'s Silver Sel. (No. 172), Argentine Silver Field. *Min.Ref.* Anglesite, *see* 50; Cerussite, 1269; Minium, 6614.

Humpy Bong, Moreton Bay. *Min.Ref.* Magnetite, *see* 6032.

Hungerford, 100 miles S.W. of Cunnamulla Rail. Stn. *Min.Ref.* Opal (black, precious), *see* 6936B. The only locality in Queensland where black opal occurs.

Hungerford Town Sub-artesian Bores. *See under* Artesian Bores. No. 27.

Hungry Hill, 16 miles S.W. of Eidsvold. *Min.Ref.* Stibnite, *see* 7608.

Hunter (Robert), Inspector of Mines. Reports—On West Moreton Collieries, Ipswich District, Q.G.M.J., vol. 5, p. 466 (1904). On Present Condition of Queensland Coal Trade, Q.G.M.J., vol. 8, p. 372 (1907).

Hunter Island, 45 miles N.E.byE. of St. Lawrence. *Min.Ref.* Galena, *see* 3066; Limestone, 687, (Fossiliferous) 735, (marble) 597, 598.

Geological Note: The rocks on the island comprise diorite, limestone, slate, and highly altered schists. The diorite is a dyke formation in the slate, the limestones are fossiliferous, containing *Favosites* and *Stromatopora*, and the slates are traversed by quartz veins which do not pass into the limestones. *See* G.S.Q. Pub. No. 194 for details.

Hunter's Gully, Morinish Goldfield. *Min.Ref.* Pyrrhotite, *see* 7163.

Hunt's Gully, Stanthorpe. *Min.Ref.* Amethyst, *see* 7168; Beryl, 293; Cairngorm, 7176; Cassiterite, 985; Diamond, 2575; Garnet, 3117; Hyacinth, 8233; Rock Crystal, 7189; Sapphire, 2348; Spinel, 7578; Topaz, 7793; Tourmaline, 7858; Zircon, 8233.

Hurley's Deep Lead, Clermont. *Includes* Hurley's Diggings, Hurley's Deep Lead. *Min.Ref.* Coal, *see* 1672A; Gold (alluvial), 3333.

Hutton's Creek, Mt. Hutton Station, N. of Roma. *Min.Ref.* Coal, *see* 1699.

Hyacinth. *Var. of* Zircon, *which see.*

Hyalite. *Syn.* Müller's Glass. *Var. of* Opal, *which see.*

Hyalosiderite. *Var. of* Olivine, *which see.*

Hyde Park Bore. *See under* Artesian Bores. No. 388.

Hydrate of Aluminium. *See* Beauxite.

Hydro-Mica. *See* Muscovite.

Hydrous Silica. *See* Opal.

Hypersthene. *Compo.*, Silicate of magnesia and iron. *Colour*, greenish or brownish. *Lustre*, pearly or metallic. *Streak*, greyish. *H.* = 5-6; *Sp.gr.* = 3·3.

4876A. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Chrysocolla and Hematite, in slate and gossan. *Loc.* Springs Peak M.L. (562), Pearl Group, Corella R., 30 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, p. 189 (1908).

4877. ——. Between Tate and Lynd Rivers, Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra (?); *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

4878. ——. In diorite. Four-Mile Camp, Ryan's Cr., 3¼ miles S.E. of Ebagoolah, Hamilton Goldfield. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 27 (1901).

Hythe Bore. *See under* Artesian Bores. No. 250.

Iceberg P.A., Mt. Langan. *Min.Ref.* Galena, *see* 3032; Gold, 4195; Massicot, 6546; Zinc Blende, 8176.

Iceland Spar. *Var. of* Calcite, *which see.*

Ida Copper M.C. (179), Cloncurry. *Min.Ref.* Calcite, *see* 459C; Copper Pyrites, 2099; Ferro-Calcite, 573A; Limonite, 5793.

—— Cr. Bores. *See under* Artesian Bores. No. 395.

—— Group of Reefs, Maytown, Palmer Goldfield. *Includes* Anti-clique, Ida, Just-in-Time, King of the Ranges, Louisa, Recompense, and Union Reef. *Min.Ref.* Gold, *see* 3680.

—— Reef, Tabletop, Croydon Goldfield. *Min.Ref.* Gold, *see* 3547.

Idaho Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Iffley Co. Burke Dist. *See map*, Pl. 20.

—— Lease Bores. *See under* Artesian Bores. No. 294.

Iguana Gold Bore, Croydon. *See under* Gold Bores.

Iguana Hill Mining Centre, 30 chains N.W. of Croydon Railway Station. *Includes* Iguana Reef, Ophir Block Mine, St. Patrick Lease, North Star Mine, Lady Nora Reef. *Min.Ref.* Galena, *see* 2702, 2707, 2708; Gold, 3488; Iron Pyrites, 4939.

—— M.C. (268), Cloncurry. *Min.Ref.* Limonite, *see* 5804; Malachite, 6161; Redruthite, 7255.

—— Reef, Croydon. *Min.Ref.* Galena, *see* 2702, 2707; Gold, 3488; Iron Pyrites, 4937.

Ilfracombe Bore. *See under* Artesian Bores. No. 295.

Ilmenite. *Syn.* Menaccanite, Titaniferous Iron. *Compo.*, Oxide of iron and titanium. *Colour*, iron-black. *Streak*, black to brownish-red. *Lustre*, sub-metallic. *H.* = 5-6. *Sp.gr.* = 4·5-5. *Contents* (*max.*), Iron 36 per cent., Titanium, 31 per cent.

——. *See* note under Titanium.

4879. ——. *Assoc.with* Hematite. *Loc.* 10 miles N. of Blackeye Spring, McKinlay, 74 miles S.E.byE. of Cloncurry. *Co.* Allison; *Dist.* **Burke.** *Ref.* A.R., p. 130 (1907).

4880. ——. *Assoc.with* Redruthite, Azurite, Malachite, Ironstone, Calcite, Chlorite, and Biotite, in granite, quartz, felspar, and schist. *Loc.* Mavis M.L. (315), Longamundi Group, Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 283-284 (1908).

4881. ——. Chudleigh Park Stn., 70 miles N. of Hughenden. *Co.* Chudleigh; *Dist.* Burke. *Ref.* B.D.

4882. ——. In gabbro. Kalliwa Cr., 4 miles above Burnett R., 23 miles S.S.W. of Gingin Rail. Stn., 14 miles N.W. of Degilbo Rail. Stn (Gayndah line). *Co.* Bowen; *Dist.* **Burnett.** *Ref.* L.C.B.

4883. ——. Mt. Perry, 67 miles (by rail) S.W.byN. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.M.

4884. ——. *Assoc.with* Magnetite and Zircon, in alluvial deposits. *Loc.* In creeks, head of Boyne and Stuart Rivers, 24 miles S.W. of Kingaroy Rail. Stn. (Kilkivan line). *Co.* Fitzroy; *Dist.* Burnett. *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

4885. ——. In aplite. Taabinga Village, Kingaroy, 120 miles (by rail) S.W. of Maryborough (Kilkivan line). *Co.* Fitzroy (*ante*). *Ref.* O.R.

4886. ——. Wondai, 101 miles (by rail) S.W.byS. of Maryborough (Kilkivan line). *Co.* Fitzroy (*ante*). *Ref.* O.R.

4887. ——. *Assoc.with* Cassiterite, Rutile, Topaz, Zircon, and Amethyst, in alluvial deposits. *Loc.* P.C. Workings, Rocky Cr., 5 miles above Brovinia Cr., br. of Cadarga Cr., 35½ miles S.S.W. of Gayndah, 60 miles (by road) *viâ* Cooranga Head Station. *Co.* Newcastle; *Dist.* Burnett. *Ref.* Q.G.M.J., vol. 5, p. 62 (1904).

4888. ——. Hawkwood, 48 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle (*ante*). *Ref.* O.R.

4889. ——. Burnett R. *Dist.* Burnett. *Ref.* L.C.B.

4890. ——. Palmerville, 40 miles S.W.byS. of Laura Rail. Stn. (Cooktown line). *Co.* Chelmsford; *Dist.* **Cook.** *Ref.* O.R.

4891. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Dunwich Gully, ¼-mile N.E.byE. of Ebagoolah, Hamilton Goldfield. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 16 (1901).

4892. ——. *Assoc.with* Rutile, in greisen (lode). *Loc.* Emu Cr., ½-mile W. of Emuford, 12 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M. and A.R., p. 134 (1908).

4893. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Little Beatrice R., Jordan Cr. Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 157, p. 6 (1901).

4894. ——. Lake Eacham, 29 miles S.byW. of Cairns. *Co.* Nares (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

4895. ——. Rocky R. Goldfield, 26 miles N.E. of Coen, 71 miles N.N.W. of Port Stewart. *Co.* Sidmouth; *Dist.* Cook. *See* O.R.

4895a. ——. *Assoc.with* Rutile. *Loc.* Springfield, nr. Fossilbrook. *Co.* Tate; *Dist.* Cook. *Ref.* B.D.

4896. Ilmenite. Bunya Mts., 8 miles N.E. of Bell Rail. Stn. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* O.R.

4897. ——. Clifton, 42 miles (by rail) S. of Toowoomba. *Co.* Aubigny (*ante*). *Ref.* G.S.M.

4898. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Britannia Tin Mine, Quart Pot Cr., 1¼ mile W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* B.D.

4899. ——. *Assoc.with* Cassiterite, Topaz, Wolfram, and traces of Gold, in alluvial deposits. *Loc.* Deep Lead, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 115, pp. 1-15 (1896).

4899A.——. *Assoc.with* Rutile, in chloritic lode. *Loc.* Air Motor Claim, Little Oakey Cr., Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M. and A.R., p. 134 (1908).

4900. ——. *Assoc.with* Magnetite and Quartz, in alluvial deposits. *Loc.* Watercourses of Neilson's Cr., nr. Mt. Jukes, 18 miles W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 53, p. 9 (1889).

4901. ——. *Assoc.with* Magnetite, Cassiterite, and Zircon. *Loc.* Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Ref.* O.R.

4902. ——. *Assoc.with* Gold, Sapphire, Spinel, Garnet, Zircon, Amethyst, Cairngorm, Chalcedony, Jasper, Rutile, Topaz, Diamond, Magnetite, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Crs., Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton. *Cos.* Clermont and Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), and 172, p. 10 (1902).

4902A.——. Ruby Vale, Anakie (*ante*). *Ref.* G.S.M.

4903. ——. In alluvial deposits. *Loc.* Upper Dawson R., 35 miles N.W. of Taroom. *Co.* Labouchere; *Dist.* Leichhardt.

4903A.——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Torrens Cr., 98 miles (by rail) S.W.byS. of Charters Towers (Northern line). *Co.* Woura; *Dist.* **Mitchell.** *Ref.* O.R. (1909).

4904. ——. Brisbane R., nr. Mt. Brisbane, about 13 miles N.N.E. of Esk Rail. Stn. *Co.* Canning; *Dist.* **Moreton.** *Ref.* L.C.B.

4905. ——. Cooyar Cr., 18 miles N.W. of Mooretown, 8 miles S.E. of Nanango. *Co.* Cavendish; *Dist.* Moreton. *Ref.* B.D.

4906. ——. *Assoc.with* Gold, Cassiterite, and Wolfram, in quartz lode. *Loc.* Crow's Nest Tin Deposits, 3 miles E. of Crow's Nest Township, 37 miles (by rail and road) N. of Toowoomba. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 175, p. 4 (1902), and Q.G.M.J., vol. 4, pp. 527-529 (1903).

4907. ——. Creeks at foot of Main Range, 6 miles W. of Helidon Rail. Stn., 78 miles (by rail and road) W.byS. of Brisbane. *Co.* Churchill; *Dist.* Moreton. *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

4908. ——. *Assoc.with* Garnet and Hornblende, as inclusions in basaltic dyke. *Loc.* Lowood, 45 miles W.byS. of Brisbane. *Co.* Churchill (*ante*). *Ref.* G.S.Q. Pub. 175, p. 12 (1902).

4909. ——. In alluvial deposits. Samson Vale, 18 miles (by road) N.W.byN. of Enoggera Rail. Stn., 24 miles (by rail and road) N.W.byN. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* B.D.

4910. ——. *Assoc.with* Garnet. *Loc.* Carney's Cr., Coochin Coochin, 3 miles S. of Dugandan Rail. Stn. (Fassifern line). *Co.* Ward; *Dist.* Moreton.

4911. ——. *Assoc.with* Cassiterite, in serpentine. *Loc.* Nr. Canoona Goldfield, 26 miles N.byW. of Rockhampton. *Co.* Liebeg; *Dist.* **Port Curtis.** *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

4912. ——. Oakey and Pleasant Lodes, Alma Cr., 15 miles S.S.E. of Mt. Morgan Rail. Stn. *Co.* Raglan; *Dist.* Port Curtis.

4913. ——. In loose fragmentary deposits. *Loc.* Childers, 40 miles (by rail) N.W. of Maryborough (Isis br. line). *Co.* Cook; *Dist.* **Wide Bay.** *Ref.* B.D.

4914. ——. *Assoc.with* Gold, Magnetite, Zircon, Topaz, and Mica, in yellow sand. *Loc.* 17 miles up Vanapa River, 32 miles N. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 56, p. 2 (1889).

Ilvaite. *Syn.* Lievrite, *which see.*

Imbell Colliery, Clermont Coalfield. *Min.Ref.* Coal, *see* 1670.

Imbil Goldfield, 15 miles S. of Gympie. *Min.Ref.* Copper Pyrites, *see* 2325; Galena, 3075; Gold, 4420; Iron Pyrites, 5446; Scheelite, 7357; Zinc Blende, 8210.

GEOLOGICAL NOTE: The rocks are granite and dolerite (?). Reefs are in contact with dolerite dykes in the granite.

Imperial G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2888; Iron Pyrites, 5174; Gold, 3908.

—— Reef, Charters Towers Goldfield. *Min.Ref.* Gold, Galena, Iron Pyrites, *see* 3956.

Import duty on Metals and Minerals. *See under* Customs Duties.

Import Duties on Gems. All natural gemstones are admitted into the Commonwealth free of duty. The manufactured gems, "reconstructed" or "synthetical," are admitted without duty, provided their composition, crystallization, and colour agree with the natural stones which they are made to imitate. Doublets, which are made up of a face of a natural stone and a back of coloured glass, and are very easily recognised imitations, have a duty of from 35 to 40 per cent. imposed upon them. Why some manufactured stones are admitted free of duty and others not, is inexplicable. Synthetical rubies are admitted free, but synthetical pink tourmalines, which are really pale rubies and, therefore, not of the composition of tourmalines, would be classed as imitation stones and would be dutiable, but if imported as manufactured pale rubies would come in free. The sapphire doublet, which until recent years was the only sapphire imitation on the market, has to a great extent been replaced by the manufactured (*i.e.*, synthetical) sapphire, but the doublet is dutiable, while the synthetical stone is not. A cheap representation of the emerald is made up as a doublet, but a better imitation is manufactured by placing a green glass film between two pieces of white manufactured sapphire. When this doublet, or "triplet," is faceted, an imitation of the emerald is produced which is difficult to detect, but being an imitation, is not admitted without a duty. If, however, the emerald could be manufactured, the present tariff would allow of it coming in duty free. As all synthetical stones are admitted free, attempts are made to import "paste" under the guise of synthetical gems, and thus we get "synthetical olivines," which, however, are only glass imitations. These imitations, again, are a variation from the synthetical types, as they have actually the composition and colour of the natural gemstone and are difficult to detect, but as they are glass and have no crystalline structure they are liable to have the 35 to 40 per cent. duty imposed. Beyond question, an import duty should be placed on all gems which are not natural productions, whether they be paste, doublet, triplet, reconstructed, or synthetical. This duty would also remove the existing irregularities at the Commonwealth Customs ports, whereby different interpretations are placed on the wording of the tariff as to what constitutes precious stones. Precious stones are beautifully coloured natural minerals, precious because of their rarity, and it matters not how closely the manufactured stones resemble the natural ones in colour, crystallization, composition, and hardness, they still remain only imitations of precious stones, and as such, whether reconstructed or otherwise, an import duty should be placed upon them.

Imports of Coal. *See note under* Coal.

Incandescent Materials. *See* Monazite (which contains Thoria, Ceria, etc.), Tantalite.

Independent Mine, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3837.

Independence Reef, Tabletop, Croydon Goldfield. *Min.Ref.* Gold, *see* 3545; Massicot, 6519.

Independent Reef, left-hand br. of Palmer R., Palmer Goldfield. *Min.Ref.* Gold, *see* 3684.

Indian Head, 10 miles N. of Cooktown. *Lat.*, 25° 1′ S.; *Long.*, 153° 20′ E. *Min.Ref.* Coal, *see* 1605.

Indooroopilly (Par. of) (Pors. 236, 241, and 289), 5 miles S.W.byS. of Brisbane. *Min.Ref.* Gold, *see* 4206; Iron Pyrites, 5341; Ironstone, 5613.

Infusorial Earth. *Syn.* Tripolite, *var. of* Opal, *which see.*

Ingham. *See maps*, Pls. 16, 17. N.W. of Townsville. *Lat.*, 18° 46′ S.; *Long.*, 146° 12′ E. The depôt for the produce of the Kangaroo Mineral Field.

Ingledown Bores. *See under* Artesian Bores. Nos. 247, 296.

Inglewood. 73 miles W.byS. of Warwick. *Lat.*, 28° 30′ S.; *Long.*, 151° 7′ E. *Min.Ref.* Cuprite, *see* 2445; Pyrolusite, 7126.

—— Reef, Gympie. *Min.Ref.* Galena, *see* 3083; Gold, 4511; Iron Pyrites, 5462.

—— United L. (84), Gympie Goldfield. *Min.Ref.* Gold, *see* 4451.

Ingola Tunnel Lease (177), Kangaroo Hills Mineral Field. *Min.Ref.* Beryl, *see* 294; Bornite, 423; Chrysocolla, 1528; Copper carbonate, 1927; Malachite, 6302; Mispickel, 6752.

Inlet (mouth of), nr. Green Hill, S. of Mackay. *Min.Ref.* Gold, *see* 4347; Ironstone, 5623.

Innisfail. *See* Geraldton.

Innot or Nettle's Hot Springs, Nettle's Cr., br. of Herbert R., E.byN. of Mt. Garnet. *Min.Ref.* Halite, *see* 4655; Mineral Water, 6570; Silicious Sinter, 7023.

GEOLOGICAL NOTE: The rocks in the vicinity comprise slates, schists, and other metamorphic rocks, with dykes of granite and felsite. The hot springs, which have a temperature of 170° Fahr., occur in the bed of Nettle's Cr., and all the material they bring up from below is washed down the stream. Old sinter deposits exist close to the springs, but are nearly all covered by recent alluvium. *See* Q.G.M. Jour., vol. 1, p. 2, for notes and analysis.

—— —— Cr. Wolfram Mines. *See* Nettle's Cr.

—— Springs (6 miles N. of), nr. Herberton. *Min.Ref.* Monazite, *see* 6880.

Inspection of Lease Plans. *See* Lease Plans.

Inspection of Machinery and Scaffolding Acts of 1908-1912.

These Acts deal with the precaution against accidents, inspection of boilers, inspection of winding and other engines, and the granting of certificates to engine-drivers. No application to workings below the surface of mines.

The Board of Examiners have power to grant certificates of competency as follows:—

1. Extra First-class Engine-driver's Certificate.
2. Winding Engine-driver's Certificate.
3. First-class Engine-driver's Certificate.
4. Second-class Engine-driver's Certificate.
5. Third-class Engine-driver's Certificate.

Copies of the Acts and Amendments, with Regulations, are obtained from the Government Printer, Brisbane.

All drivers of winding or other engines, employed on or about a mine, are required to be certificated, according to the provisions of the Inspection of Machinery and Scaffolding Acts of 1908-1912 (Gov. Printer, Brisb.), and must either pass an examination set by the Board of Examiners, or must produce certificates of equivalent value, or furnish evidence of ability and long service.

The general conditions are laid down in the above Acts, and in the Regulations particulars are given of the subjects necessary for a candidate to pass before a winding or other engine-driver's certificate is granted to him. In the Regulations information is also given concerning the fees to be paid and curriculum for each class of certificate, and also about the documentary evidence of experience and character which has to be submitted to the Board.

Officers are stationed at Brisbane, Gympie, Maryborough, Toowoomba, Warwick, Roma, Charleville, Bundaberg, Rockhampton, Barcaldine, Mackay, Townsville, Charters Towers, Hughenden, Cloncurry, Cairns, and Croydon. Their duties consist of the inspection of boilers and all power-driven machinery.

The Board of Examiners comprises the Chief Iuspector of Machinery (Chairman), the Chief Inspector of Mines, and the Engineer Surveyor of the Marine Board. The administration of the Acts is under the control of the Chief Inspector of Machinery, Brisbane.

Inspectors of Mines—

Chief Inspector and State Mining Engineer: C. F. V. Jackson, Dept. of Mines, Brisbane.

Inspectors' Districts—

Southern Division, Gympie Centre—Canal Cr., Enoggera, Glastonbury, Gympie, Kilkivan, Leyburn, Lucky Valley, Marodian, Nanango, Pikedale, Talgai, Thane's Cr., and Yabba Gold and Mineral Fields; Stanthorpe Mineral Field; and Ipswich and Darling Downs Coalfields, etc.

Central Division, Rockhampton Centre—Barmundoo, Bompa, Boolboonda, Calliope, Cania, and Kroombit, Canoona, Cawarral, Clermont, Eidsvold, Eungella, Gaeta, Grass-tree, Langmorn, Maxwelton, Milton (Norton), Monal, Morinish, Mt. Flora, Mt Morgan, Mt. Rainbow, Mt. Shamrock, Mt. Spencer, Nebo, Paradise, Reid's Cr., Ridgelands, Rosewood, Stanton-Harcourt, Stanwell, St. John's Cr., Ulam, and Yatton Gold and Mineral Fields; Anakie, Glassford Cr., Mt. Cannindah, Rosedale, and Tenningering Mineral Fields.

First Northern Division, Charters Towers Centre—Balcooma, Cape R., Carrington Prov., Charters Towers, Mt. Wyatt, Normanby, Piccadilly, Ravenswood, Strathalbyn, and Windsor Extended Gold and Mineral Fields; Kangaroo Hills, Sellheim, and Star R. Mineral Fields.

Second Northern Division, Herberton Centre—Chillagoe and Herberton Gold and Mineral Fields, including the following fields and mining centres, viz.:—Hodgkinson, Jordan, Mulgrave, Russell Extended Gold and Mineral Fields; Chillagoe, Herberton, Irvinebank, Koorboora, Mareeba, Newellton, Stannary Hills, Wolfram Camp, Bamford, and other Mining Centres.

Third Northern Division, Croydon Centre—Alice R. (Philp), Coen, Croydon, Etheridge, Green Hills, Hamilton, Horn Island, Oaks, Palmer, Rocky R., Starcke, and Woolgar Gold and Mineral Fields; Bowden Mineral Field, Cooktown Mineral Field (includes Annan R. and Bloomfield R. Tin Mining Centres), and Stanhills Tin Mining Centre (Croydon).

Western Division, Cloncurry Centre—Agate Downs, Bower Bird, and Cloncurry Gold and Mineral Fields; Burketown Mineral Field.

Reports of Progress: *See* Department of Mines Annual Reports.

Inquin Bore. *See under* Artesian Bores. No. 224.

International Mine (1 mile N. of), Etheridge Goldfield. *Min.Ref.* Anglesite, *see* 21E; Cerussite, 1190E; Galena, 2757A; Gold, 3740A; Massicot, 6525D; Silver, 7450C.

—— ——, 5 miles S.W. of Biggenden. *Min.Ref.* Joseite, *see* 5668A.

—— Reef, Rocky, Etheridge Goldfield. *Min.Ref.* Copper Pyrites, *see* 2151; Galena, 2757; Gold, 3740; Iron Pyrites, 5054; Zinc Blende, 8078.

Inverleigh Lease Bores. *See under* Artesian Bores. No. 297.

Iolanthe Tin Mine, Koorboora. *Min.Ref.* Cassiterite, *see* 944; Copper Pyrites, 2170; Galena, 2797; Iron Pyrites, 5075; Mispickel, 6702; Serpentine, 7384.

Ipswich—

Situation: *See maps,* Pls. 6, 7, 25. Twenty-four miles (by rail) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Lat.*, 27° 37′ S.; *Long.*, 152° 47′ E.

Discoveries: Coal first found by Logan at Limestone, 1827. First output, 1860. Coal at Redbank discovered in 1843. Moggil coal discovered before 1854.

Population: 14,028 (Census, 1911).

Rainfall: Yearly average inches between 1902 and 1907, 31·42, and 73 wet days.

Leases: Mineral leases and applications in force number 10; area, 221½ acres (1910).

Principal Mining Centres: Bundamba, North Ipswich, and Walloon. Plan of Collieries is given in Ann. Rep. Dept. Mines for 1904.

Collieries: *See under* Collieries, *under* Coal.

MINERAL STATISTICS: Coal, *see tables*, Pls. 43, 46, 46A.

MINERAL REFERENCES: Chalcedony, 1356; Chert, 1413; Coal, 1725-1759; Ironstone, 5609; Limestone, 664, 665; Magnesite, 5954, 5955.

GEOLOGICAL NOTE: The Ipswich Coal Measures consist of sandstones, shales, conglomerates, and coal seams belonging to the Trias-Jura System. There are three distinct areas in the district—*i.e.*, Bundamba, North Ipswich, and Walloon, each of which has its own peculiar class of coal, the two former producing steam coal, the latter a gas coal. The Bundamba and North Ipswich Coal Seams are in the Ipswich Series, above which are the barren Bundamba Series, and above these the Walloon Series carrying other coal seams. *See* G.S.Q. Pubs., No. 147 and 204 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 147 (1899), 204 (1907), and 235 (1911). Plans and Sections No. 140. *See under* Geol. Surv. Pub. List for title, Govt. Ming. Jour. Special Reports, Nos. 32, 44, 112, and A.R.D.M., pp. 154, 155 (1904). *See also* List of Maps *under* Department of Mines Publications; and also Supplementary Report List, Nos. 59, 150.

WARDEN: Stationed at Ipswich. INSPECTOR OF MINES (assistant): Stationed at Ipswich.

CHAMBER OF COMMERCE: Sec., G. W. Allen.

TECHNICAL COLLEGE: *See* separate heading "Technical Colleges."

GENERAL INFORMATION: Consult *Pugh's Almanac; Queensland Post Office Directory; Post and Telegraph Guide.* Newspapers, *The Queensland Times; Queensland Railway Times; Moreton Leader; The Bee.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

—— Coalfield Bores. *See under* Coal Bores.

—— Coal and Coke Co.'s Mine, Bundamba Cr. *Min.Ref.* Clay Ironstone, *see* 1588.

—— Road (Grimes' Paddock), ½-mile W. of Rocklea. *Min.Ref.* Gold (alluvial), *see* 3369.

Iridium (Ir). *Atom.Wt.* = 193·1. *Sp.gr.* = 22·42. *Colour*, white-metallic. Hard. Brittle. Very Heavy. USES: The addition of a small percentage of iridium makes platinum much harder and better adapted for certain electrical, chemical, and other scientific purposes. An alloy of iridium with osmium (Osmiridium) has been found to be a most useful metal for tipping gold pens. *See* Osmiridium.

Iridosmine. *Syn.* Osmiridium, *which see.*

Irish National League Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1094; Chlorite, 1451.

Iron (Fe). *Atom.Wt.* = 55·84. *Sp.gr.* = 7·84 to 8·139.

MINERAL SPECIES: Include Iron Pyrites, Marcasite, Pyrrhotite, Mispickel, Hematite, Magnetite, Limonite, Göthite, Ilmenite, "Ochres," "Oxides," Scorodite, Clay Ironstone, Siderite, Turgite, Vivianite.

ASSOCIATED MINERALS: Include Native Bismuth, Gold, Silver, Copper, Bismuthinite, Copper Pyrites, Chromite, Cassiterite, Pyrolusite, Stibnite, Wolfram, Galena, Zinc Blende, and many secondary metallic minerals; Calcite, Quartz, Felspar, Fluorspar, Barytes, Chlorite, Scheelite, Gypsum, Topaz, Muscovite, Biotite, Hornblende, Garnet, Jasper, Chalcedony, etc., etc.

MINERALOGICAL NOTE: The oxidized iron-bearing surface rocks commonly merge at water level into sulphide ores containing iron, copper, or arsenic. They also form the top portion of masses of copper-bearing garnet rock, and occasionally are known to form the outcrop of large wolfram lodes. In the first example the sulphur, arsenic, and copper are nearly always leached out or are oxidized to form secondary minerals, leaving a more or less porous ironstone behind. In the second case the iron-bearing outcrops are either magnetite or hematite, both of which frequently form large pseudomorphic crystals after the garnet. In the last case tungstic acid and manganese are removed in solution, leaving most of the iron behind in the form of a gossan made up of hematite. The tungstic acid disappears altogether, but the manganese, with some of the iron, is often reprecipitated in the vicinity as manganiferous bog iron ore.

Iron—*continued:*

Associated Rocks: Gangues include Calcite, Quartz, Chlorite, Garnet rock, Quartzite, etc.; Country rocks include Limestone, Slate, Sandstone, Quartzite, Shale, Tuff, Greywacke, Mica, Schist, Chlorite Schist, Serpentine, Diorite, Gabbro, Aplite, Greisen, etc.

Geological Note: The occurrences of iron ores are very numerous throughout the State. They are conspicuously absent from the Coal Measures, but prevalent in the Gympie Formation (Permo-Carboniferous), and in older rocks. A general description of the more important iron deposits are given in G.S.Q. Pubs. Nos. 194 and 196, the latter report contains the evidence given before the Federal Iron Bonus Commission on the establishment of ironworks in the Commonwealth.

Statistial Note: Up to the year 1912 all of the 196,743 tons of ironstone shown to be produced in the Rockhampton District came from Iron Island. It has been used as flux by the Mount Morgan Company. Herberton and Chillagoe Mineral Fields are credited with 41,665 tons up to same date, the mineral being used as a flux by the Chillagoe Railway and Mines Company. The total quantity of ironstone produced by the State to 1912 is computed at 259,801 tons, of a value of £202,780.

Iron arsenate. *See* Scorodite.

—— arseno-sulphide. *See* Mispickel.

——-bearing minerals—Chromite, Columbite, Copper Pyrites, Copperas, Göthite, Hematite, Ilmenite, Iron Pyrites, Ironstone, Limonite, Magnetite, Marcasite, Mispickel, Pyrrhotite, Siderite, Turgite, Vivianite, Wolfram.

—— Bonuses Bill (Royal Commission on). *See under* Royal Commissions.

—— carbonates. *See* Ankerite, Clay Ironstone, Siderite.

—— chromate. *See* Chromite.

Iron Chrysolite. *Syn.* Fayalite, *which see.*

—— and copper sulphides. *See* Bornite, Copper Pyrites.

—— Duke Copper M.L. (—?), Cloncurry. *Min.Ref.* Calcite, *see* 452; Copper Pyrites, 2070; Limonite, 5750; Malachite, 6095.

—— —— M.C. (42), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235H; Copper Pyrites, 2269C; Hematite, 4769D; Iron Pyrites, 5327C; Malachite, 6339K.

—— —— Reef, Golden Gate, Croydon Goldfield. *Min.Ref.* Chlorite, *see* 1425; Gold, 3517; Graphite, 4582; Hematite, 4691; Ironstone, 5495; Magnetite, 5968.

—— —— and Nancy Lee Reefs, Golden Gate, Croydon Goldfield. *Min.Ref.* Gold, *see* 3518; Ironstone, 5495.

Iron Glance. *Syn.* Hematite, *which see.*

Iron Island (Duke Group). *Lat.*, 21° 58′ S.; *Long.*, 150° 9′ E. N.E. of St. Lawrence. *Min.Ref.* Hematite, *see* 4794; Ironstone, 5625; Magnetite, 6048, Marble, 599.

Geological Note: The main mass of the island consists of magnetite and hematite. To the south there are outcrops of fine marble, while the whole of the western side is made up of trachyte. The ironstone is an alteration product of slate, and is of a very pure quality. *See* G.S.Q. Pub. No. 194 for details.

—— Gully, br. of Boulder Cr., W.S.W. of Mt. Morgan. *Min.Ref.* Hematite, *see* 4798; Limonite, 5917; Magnetite, 6057.

Iron Jasper. *Var.* Jasper, *which see.*

—— Knob, Stannage Point, St. Lawrence. *Min.Ref.* Copper Pyrites, *see* 2302; Hematite, 4795; Magnetite, 6051.

—— —— and manganese tungstate. *See* Wolfram.

Iron-making Material. *See under* Steel-making.

—— Mountain, on Balcomba Range, W. of Rockhampton. *Min.Ref.* Manganese dioxide, *see* 6449.

—— ——, N. of Donnybrook, Kangaroo Hills Mineral Field. *Min.Ref.* Azurite, *see* 216B; Hematite, 4746; Limonite, 5883; Malachite, 6303.

—— Niobate. *See* Columbite.

Iron Ochre. *Comp.*, An unclassified form of earthy oxides of iron, which may be varieties of Hematite, Limonite, etc. *Colour*, red, yellow, brown, etc. *See also* Göthite, Hematite, Limonite.

4915. —— ——. *Assoc.with* Copper Pyrites, Minium, Malachite, Galena, Cerussite, Manganese-dioxide, Mispickel, and Ironstone. *Loc.* Colorado Silver-Lead Mine, Star R. (Argentine) Silver Field, 50 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 26, p. 7 (1886).

4916. —— ——. Hope Silver Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

—— Ore and Iron Oxides. *See* Clay Ironstone, Göthite, Hematite, Hydrohematite, Ironstone, Limonite, Magnetite, Turgite.

Iron Ore Analyses.

Locality	Index Reference Number.	Water.	Silica.	Alumina.	Iron.	Manganese.	Lime.	Magnesia.	Phosphorus.
Iron Island	4,794	0·46	1·73	2·71	63·94	..	5·53	trace	trace
,, ,, ...	6,048	0·13	2·51	2·95	64·72	..	2·85	1·07	0·06
,, ,, ...	5,625	..	2·78	4·16	64·80	0·18	trace	trace	0·03‖
Iron Knob, Stannage Point ..	6,051	..	..	..	60·00	..	..	..	.. ‖
Olsen's Caves, nr. Rockhampton	4,791	..	..	..	67·00	..	..	..	trace
,, ,, ...	4,791	..	..	..	73·00	..	..	..	nil
Kabra, C.R. Line	6,047	0·17	2·85	1·43	60·00	..	6·61	trace	trace
Constitution Hill, Dee River ..	4,797	0·46	4·00	2·02	55·80	..	9·20	6·14	trace
,, ,, ,, ..	6,056	0·30	2·30	1·55	62·40	..	2.80	0·85	0·08
Iron Gully, Mount Morgan ..	6,057	0·66	8·33	3·04	62·65	..	2·20	..	0·16
Alma Creek (Oakey)	4,798A	0·56	10·40	1·70	56·27	.. *	2·85	..	0·02
,, ,, (Pleasant)	4,798	0·45	12·80	9·81	52·42	..	3·95	trace	0·11
,, ,, ,, ...	4,798	0·54	5·55	12·52	55·10	.. *	2·65	..	trace
,, ,, ,, ..	4,798	0·24	14·35	12·33	48·30	..	3·92	..	trace
Targinie Head Station	4,788	..	5·20	..	64·90	..	..	..	trace
Por 22v, Pemberton, Boyne R.	4,781	..	6·74	..	64·90	.. †	..	..	..
Gayndah (5 miles S. of) ..	5,832	..	35·70	..	33·40	..	..	..	0·10
Dugandan (Parish of)	1,590	..	12·40	..	45·36	.. ‡	..	..	0·23
Pittsworth	4,565	..	10·10	..	49·90	.. †	..	..	0·34
,, ...	5,852	..	8·90	..	52·30	.. †	..	..	0·20
Mt. Lucy, near Almaden ..	5,529	..	1·10	2·33	67·30	0·29§	trace	nil	0·33
West Coast, Cape York Pen. ..	5,527	2·87	32·64	28·18	16·00	..	..	..	..
Silver Spur, Texas	5,542	2·65	4·94	5·50	85·22	1·69	..	..	..
Boyne River, S. of Gladstone ..	4,780	..	6·74	..	64·90	..	..	..	nil
Potosi, Irvinebank	4,709	12·06	15·80	3·00	71·01	..	..	..	..
Green Hill Station, D. Downs ..	5,852	..	8·30	..	52·30	..	..	..	0·2†

* Titania present. † Trace of sulphur. ‡ 4·4 per cent of carbon dioxide.
§ Sulphur, 0·01 per cent. ‖ Titania, trace.

Iron Ores (Q'land). *See* Govt. Ming. Jour., Report No. 18.

—— Phosphates. *See* Cacoxenite, Vivianite.

Iron Pyrites. *Compo.*, Sulphide of iron. *Colour*, bronze yellow, pale yellow. *Streak*, greenish or brownish black. *Lutsre*, metallic. *H.* = 6-6·5. *Sp.gr.* = 4·8-5·1. *Contents* (*max.*), Sulphur 53 per cent., Iron 46 per cent.

4917. —— ——. *Assoc.with* Limonite and Copper. *Loc.* 4 miles N.W. of Black-eye Spring, McKinlay, 68 miles S.E.byE. of **Cloncurry.** *Co.* Allison; *Dist.* Burke. *Assay:* Gold = trace, Silver = 1 oz. 4 dwt. per ton, Copper = 14 per cent. *Ref.* A.R., p. 107 (1907).

4917A. —— ——. *Assoc.with* Copper Ore, in lode. *Loc.* Rosebud Group of Copper Mines, Corella R., 33 miles W.S.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 212, 213 (1908).

4917B. —— ——. *Assoc.with* Copper Pyrites. *Loc.* Secret Group of Copper Mines, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 212 (1908).

4918. —— ——. *Assoc.with* Gold, Hematite, and Limonite. *Loc.* Gilded Rose Mine, Bishop's Cr., 11 miles E.S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 15 (1885), and 104, p. 3 (1895).

4919. —— ——. *Assoc.with* Native Copper, Cuprite, Tenorite, Tetrahedrite, and Malachite. *Loc.* Gt. Australian Copper Mine, Queensland Exploration Co., 1 mile S. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pubs. 10, p. 14 (1885), 215, pp. 242-250 (1908), and B.D.

4919A. —— ——. *Assoc.with* Bornite, Redruthite, and Tile Ore, in quartz. *Loc.* Monakoff M.F. (15), Monakoff Group, Pumpkin Gully, 13½ miles E.N.E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 239 (1908).

4920. —— ——. *Assoc.with* Gold, Copper Pyrites, and Malachite, in quartz. *Loc.* Victoria P.C., Bower Bird Goldfield, 70 miles N.W. of Cloncurry. *Co.* Brahe or Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 2 (1895).

4921. —— ——. *Assoc.with* Gold, Copper Pyrites, and Copper carbonate, in quartz. *Loc.* Victoria 1 N. Mine, Bower Bird Goldfiel (*ante*). *Ref.* G.S.Q. Pub. 104, p. 2 (1895).

4922. —— ——. *Assoc.with* Copper Pyrites, Cassiterite, Galena, Zinc Blende, and Chlorite, in greisen and quartz. *Loc.* Brilliant P.C., Stanhills Tinfield, 32 miles S.E. of Croydon. *Co.* Esmeralda; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, p. 6 (1907).

4923. —— ——. *Assoc.with* Gold, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Limonite, Calcite, Actinolite, Chlorite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group, 1½ mile N.N.W. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

4924. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Azurite, Limonite, and Calcite, in schist, slate, and quartz. *Loc.* Eva M..L (250), Eva Group, 1¼ mile S.E. of Mt. Start, 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 152-154 (1908).

4924A. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tenorite, Malachite, Chrysocolla, and Kaolin, in gossan, slates, and diorite. *Loc.* Hampden M.Ls. (244, 245, etc.), Hampden Group, 40 miles S. of Cloncurry. *Co.* Selywn (*ante*). *Ref.* G.S.Q. Pubs. 153, p. 4 (1900), 215, pp. 49-60 (1908).

4925. —— ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Malachite, Chrysocolla, Limonite, Turgite, Calcite, and Ferro-Calcite, in quartz, quartzite, and limestone. *Loc.* Florence River Copper Leases, ½-mile W. of Hampden Rd., 33 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 70-78 (1908).

4926. —— ——. *Assoc.with* Redruthite, Malachite, Chrysocolla, Dioptase, and Limonite, in gossan, turgite, and schist. *Loc.* Trump Extd. M.C. (368), McPhail Group, Florence R., 34 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 73-76 (1908).

4926A. —— ——. *Assoc.with* Gold, Native Copper, Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptase, Limonite, Göthite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartz, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 219-224 (1908).

4926B. —— ——. *Assoc.with* Copper Pyrites, Calcite, and Tourmaline, in quartz. *Loc.* Shamrock M.C. (184), Mt. Wheeler Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 224 (1908).

4926C. —— ——. *Assoc.with* Redruthite, Malachite, and Iron Pyrites, in schist. *Loc.* Pearl M.C. (106), Pearl Group, Corella R., 30 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 188 (1908).

4927. —— ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, Malachite, and Limonite, in slate. *Loc.* Pioneer Chief M.L. (231) (Pioneer Chief Group), Cone Cr., ½-mile N. of Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 123 (1908).

4928. —— ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, Malachite, Chrysocolla, and Limonite, in schist, slate, and quartzite. *Loc.* Banjo Copper M.L. (590) (Tambourine Group), 3 miles N. of Duck Cr., Corella Road, 26 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 167 (1908).

4929. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Azurite, Malachite, Chrysocolla, Limonite, and Tourmaline, in schist, slate, and quartz. *Loc.* Tambourine R.C. (286), Tambourine Group (*ante*). *Ref.* G.S.Q. Pub 215, p. 166 (1908).

4930. —— ——. *Assoc.with* Redruthite, Tile Ore, and Malachite, in schist and quartz. *Loc.* Tharsis M.L. (240) (Tharsis Group), Cone Cr., 1¼ mile N. of Mt. Start, 20 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 117-120 (1908).

4931. Iron Pyrites. *Assoc.with* Copper Pyrites, Redruthite, Bornite, Tile Ore, Malochite, Hematite, Limonite, Muscovite, and Calcite, in schist, slate, and quartz. *Loc.* Timberoo Copper M.L. (716) (Timberoo Group of Copper Mines), Friedman's Cr., br. of Slaty Cr., 18 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 172 (1908).

4932. —— ——. *Assoc.with* Gold, in calcite, ironstone, and quartz. *Loc.* Last Call Reef, Martin Cr., 12 miles S.E. of Top Camp, 25 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 104, p. 5 (1895).

4933. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Blue Jacket Reef, Carron, 15 to 16 miles N.N.E. of **Croydon** Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 43 (1896).

4934. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Golden Rose P.C. Lease (387) and No. 1 E. Mine, Carron (*ante*). *Ref.* G.S.Q. Pub. 118, p. 43 (1896).

4935. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Sarina Gem Reef, Carron (*ante*). *Ref.* G.S.Q. Pub. 118, p. 44 (1896), and G.S.M.

4936. —— ——. *Assoc.with* Gold, Ironstone, and Graphite, in quartz. *Loc.* Come-at-Last Reef, 1¼ mile N.W. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 35, p. 8 (1887), and 118, p. 51 (1896).

4937. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Iguana Reef, 30 chains N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 8 (1887); 118, p. 18 (1896).

4938. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* La Reine d'Or Lease (554), Queen of Croydon Reef, 1 mile N. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 16 (1896).

4939. —— ——. *Assoc.with* Gold and Galena. *Loc.* Ophir Block Mine, Iguana Reef, 30 chains N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 19 (1896).

4940. —— ——. *Assoc.with* Gold and Hematite, in quartz. *Loc.* Sovereign No. 1 Mine (Post Hole Reef), ¾-mile N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

4941. —— ——. *Assoc.with* Gold, Limonite, and Zinc Blende, in quartz. *Loc.* Post Hole Reef, about 28 chains N.E.byE. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 8 (1887), 118, p. 21 (1896).

4942. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Sovereign Reef, 30 chains N.E. byE. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

4943. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* St Patrick Reef, 35 chains N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

4944. —— ——. *Assoc.with* Gold, Silver, and Galena, in quartz. *Loc.* Waratah Lease, Queen of Croydon Reef, 1¾ mile E.byS. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 17 (1896), and G.S.M.

4945. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* C. D. Roe Reef, Flanagan's, 12 miles E.byS. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref* G.S.Q. Pub. 118, p. 47 (1896).

4946. —— ——. *Assoc.with* Gold, and Galena, in quartz. *Loc.* Duchess Reef, Flanagan's (*ante*). *Ref.* G.S.Q. Pub. 35, p. 11 (1887).

4947. —— ——. *Assoc.with* Gold, Minium, Hematite, and Limonite, in quartz. *Loc.* Eureka Reef, 1 mile from Flanagan's, 13 miles E.byS. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 11 (1887), and G.S.M.

4948. —— ——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* Golden Gate No. 7 N. Lease (346), Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 11 (1896).

4949. —— ——. *Assoc.with* Gold, Galena, Fluorspar, Calcite, and Argentine, in quartz and altered syenitic granite. *Loc.* Plant's Shaft, Golden Gate Gold Mines, Golden Gate Reef (*ante*). *Ref.* G.S.Q. Pub. 202, p. 26 (1905).

4949A. —— ——. *Assoc.with* Vivianite. *Loc.* Roger's No. 1 Mine, Golden Gate Reef (*ante*). *Ref.* B.D.

4950. —— ——. *Assoc.with* Copper Pyrites, Mispickel, and Galena, in granite. *Loc.* Golden Gate Reef (*ante*). *Ref.* G.S.Q. Pub. 202, p. 10 (1905).

4951. —— ——. *Assoc.with* Gold, Galena, Zinc Blende, and Calcite. *Loc.* Golden Gate line of reef. *Ref.* G.S.Q. Pub. 202, p. 15 (1905).

4952. —— ——. *Assoc.with* Graphite, in the metamorphic granite. *Loc.* From Golden Gate to the N.W., to Flanagan's in the S.E., and from 4 miles N.W. to 12 miles E. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 6 (1896).

4953. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Australian Beauty Reef, Golden Valley, 12 miles N.N.E. of Croydon Rail. Stn. *Co.* Surrey (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 40, 41 (1896), and G.S.M.

4953A. —— ——. *Assoc.with* Gold, Ironstone, and Galena, in quartz. *Loc.* King of Wallabadah Lease (410), Golden Valley (*ante*). *Ref.* G.S.Q. Pub. 118, p. 42 (1896).

4954. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Belfast, Bell Bird, Carpentaria, Defiance, Don Juan, Grace Leigh, Hercules, Monkland, Perseverance, Queen of the Valley, Try It, Vasca de Gama, and Venture Reefs, Golden Valley (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 39-42 (1896).

4954A. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Lady Isabella Reef, Golden Valley (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 40, 41 (1896), and G.S.M.

4955. —— ——. *Assoc.with* Gold, Graphite, and Felspar, in quartz. *Loc.* Caledonia Reef, Highland Mary Centre, 1 mile S.E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 35, pp. 8, 9 (1887), and 118, p. 21 (1896).

4956. —— ——. *Assoc.with* Argentine, in quartz vein traversing granite. *Loc.* Highland Mary Block Shaft, Highland Mary Centre (*ante*). *Ref.* B.D.

4957. —— ——. *Assoc.with* Gold, Galena, Hematite, and Graphite, in quartz. *Loc.* King of Croydon Reef, 5½ miles S.E.byE. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 35, p. 7 (1887), and 118, p. 24 (1896).

4958. —— ——. *Assoc.with* Gold, Galena, Cerussite, Chalcotrichite, and Redruthite, in quartz. *Loc.* Mountain Maid Reef, 2¾ miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 10 (1887), and 118, p. 28 (1896).

4959. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Richmond Reef, 1½ mile E.N.E. of Croydon King, and 6 miles S.E.byE. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 25 (1896).

4960. —— ——. *Assoc.with* Gold, Galena, and Pyromorphite, in quartz. *Loc.* Billy Brown Reef, Mark Twain Centre, 5 miles E.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 46 (1896).

4961. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Mark Twain Reef, Mark Twain Centre (*ante*). *Ref.* G.S.Q. Pub. 118, p. 45 (1896).

4961A. —— ——. *Assoc.with* Gold, in quartz. *Loc.* City of London Reef, Moonlight Cr., 8 miles S.E.byE. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 26 (1896), and G.S.M.

4962. —— ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* Happy Jack Reef, Tabletop, 9 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 35 (1896).

4963. —— ——. *Assoc.with* Gold, Galena, Pyromorphite, Cerussite, and Massicot. *Loc.* In Reefs at Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 34-36 (1896).

4964. —— ——. *Assoc.with* Gold and Galena, in quartz, serpentine, and graphite. *Loc.* Oriental and Gem Reefs, Lower Twelve-Mile, 2½ miles W. of Twelve-Mile, 8 miles N. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 33 (1896).

4965. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Rising Sun Reef, Twelve-Mile, 6 miles N. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.M.

4966. —— ——. *Assoc.with* Gold, in quartz. *Loc.* True Blue Reef, in the True Blue P.C., True Blue Mg. Centre, 1¾ mile N.W.byN. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 15 (1896).

4966A. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Lady Isabelle (2 and 3) S. United Lease (566), True Blue Mg. Centre (*ante*). *Ref.* G.S.Q. Pub. 118, p. 14 (1896).

4967. —— ——. *Assoc.with* Native Copper, Cuprite, Tetrahedrite, Redruthite, Malachite, Hematite, Magnetite, and Limonite, in schist and quartz. *Loc.* Crusader M.F. (2549), Crusader Group, Coolullah Run, 68½ miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Assay:* Copper = 5·3 per cent. *Ref.* G.S.Q. Pubs. 10, p. 8 (1885), and 215, p. 334 (1908).

4968. —— ——. *Assoc.with* Copper Pyrites, Malachite, Chrysocolla, Limonite, Ironstone, and Magnesite, in kaolinised schist. *Loc.* Mt. Cuthbert (1 and 2) S.M.Ls. (257 and 294), Mt. Cuthbert Group, 19 miles S.W. of Coolullah, 63 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 321, 322 (1908).

4969. Iron Pyrites. *Assoc.with* Limonite, Jasper, and Chalcedony. *Loc.* Dreadnought M.L. (452), Mt. Metallic Group, Prospector Cr., Leichhardt R., 52 miles W.N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, p. 299 (1908).

4970. —— ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Tenorite, Malachite, and Limonite, in slate and gossan. *Loc.* Mt. Metallic R.C. (310), Mt. Metallic Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 295 (1908).

4970A. —— ——. *Assoc.with* Gold, in granite. *Loc.* Diecan Claim, Upper Flinders R., Por. 2, Par. of Cracknell, Mt. Emu Plains Stn., 62 miles N.N.E. of Hughenden, and 55 N.W.byW. of Pentland. *Co.* Wongalee; *Dist.* Burke. *Ref.* Q.G.M.J., vol. 11, p. 136 (1910), and A.R., pp. 257, (1910), and 307 (1911).

4971. —— ——. *Assoc.with* Galena, Mispickel, Zinc Blende, in lode. *Loc.* Allendale Silver Mine, Chowey Cr., 6 miles N.W. of Chowey Rail. Stn. (Gayndah line), 68 miles (by rail and road) W. of Maryborough. *Co.* Bowen; *Dist.* **Burnett.** *Assay: See* No. 3567. *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

4971A. —— ——. *Assoc.with* Gold, Silver, Lead, and Magnetite, in quartzite. *Loc.* Hannan's Silver-Lead Lode, N.E. of Allendale Silver Lode, Chowey Cr. (*ante*). *Contents: See* No. 3568. *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

4972. —— ——. *Assoc.with* Gold, Copper Pyrites, and Mispickel. *Loc.* Mt. Ophir Mine, Mt. Ophir, Chowey Cr. (*ante*). *Ref.* A.R., p. 158 (1908).

4973. —— ——. *Assoc.with* Gold, Molybdenite, and Ironstone, in quartz. *Loc.* White's Reef, Mt. Ophir, Chowey Cr. (*ante*). *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

4974. —— ——. *Assoc.with* Barytes, in silicified slate. *Loc.* Gaeta Goldfield, 30 miles N. of Mt. Perry Rail. Stn. (Bundaberg-Mt. Perry line). *Co.* Bowen; *Dist.* Burnett. *Ref.* O.R.

4975. —— ——. *Assoc.with* Gold and Silver. *Loc.* Gaeta Goldfield (*ante*). *Assay: See* No. 3574. *Ref.* A.R., p. 86 (1907).

4975A. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Pioneer, East, and Yorkshire Reefs, Gaeta Goldfield (*ante*). *Average Yield:* Gold = 15 to 18 dwt. *Ref.* Q.G.M.J., vol. 4, p. 298 (1903).

4976. —— ——. *Assoc.with* Felspar, in porphyry. *Loc.* Gebangle Goldfield, 3 miles up Yarrabil Cr., 12 miles N.W. of Degilbo Rail. Stn., 70 miles (by rail and road) W. of Maryborough. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. 4 (1890).

4977. —— ——. *Assoc.with* Gold, Copper Pyrites, and Mispickel, in felsite. *Loc.* Achillea Mine, Gebangle Goldfield (*ante*). *Ref.* G.S.Q. Pub. 60, p. 5 (1890), and G.S.M.

4978. —— ——. *Assoc.with* Gold and Mispickel, in porphyry. *Loc.* Gebangle P.C., Yarrabil Cr., Gebangle Goldfield (*ante*). *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

4979. —— ——. *Assoc.with* Gold and Copper carbonate, in quartz reef. *Loc.* Lady Francis Mine, Gebangle Goldfield (*ante*). *Yield:* Gold = 2 oz. per ton. *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

4980. —— ——. *Assoc.with* Gold, in volcanic agglomerate. *Loc.* Lord Nelson Claim, Yarrabil Cr., Gebangle Goldfield (*ante*). *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

4981. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Mt. Allen Mine, Gebangle Goldfield (*ante*). *Average Assay* of Stone: Gold = 2 oz. 14 dwt. 11 gr., and Silver = 2 oz. 2 dwt. per ton. *Ref.* G.S.Q. Pub. 60, p. 4 (1890).

4982. —— ——. *Assoc.with* Gold and Copper carbonate, in small quartz leader. *Loc.* Victoria Mine, Gebangle Goldfield (*ante*). *Ref.* G.S.Q. Pub. 60, p. 4 (1890).

4983. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Molangul Reef, about 5 miles S.S.W. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.M.

4984. —— ——. *Assoc.with* Gold, Iron Pyrites, Hornblende, and Magnetite. *Loc.* Great Freehold Mine, Rocky Cr., Mt. Drain Diggings, 7 miles W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* G.S.M. and Q.M.

4985. —— ——. *Assoc.with* Gold and Copper Pyrites, in lode. *Loc.* Canterbury Copper Mine, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 21, p. 12 (1885).

4986. —— —— (cubical). Kennedy's Shaft, Mt. Perry (*ante*). *Ref.* G.S.M.

4987. —— ——. *Assoc.with* Gold, Copper Pyrites, Cuprite, Chalcotrichite, Tile Ore, Zinc Blende, and Calcite. *Loc.* Mt. Perry Copper Mine, Mt. Perry (*ante*). *Ref.* G.S.M.

4988. —— ——. *Assoc.with* Gold and Magnetite, in quartz reef. *Loc.* Mt. Webster, Mt. Perry (*ante*). *Ref.* G.S.M.

4989. —— ——. *Assoc.with* Copper Pyrites and Tenorite. *Loc.* Normanby Copper Mine, Mt. Perry (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

4990. —— ——. *Assoc.with* Galena, Copper Pyrites, Zinc Blende, and Barytes, in quartz. *Loc.* Potosi Copper Lode, 3 miles E. of Mungai, 6 miles W.N.W. of Mt. Perry Rail. Stn., 73 miles (by rail and road) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and G.S.M.

4990A. —— ——. *Assoc.with* Gold and Mispickel, in quartz and calcite. *Loc.* Caledonia Reef, Reid's Cr. Goldfield, 4½ miles S.W. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 21, p. 11 (1885), and 125, p. 28 (1899).

4991. —— ——. *Assoc.with* Gold, Galena, Mispickel, and Zinc Blende, in quartz. *Loc.* California Reef, Reid's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885), and G.S.M.

4992. —— ——. *Assoc.with* Gold, Galena, Mispickel, and Stibnite. *Loc.* Lady Norman and Reid's Cr. Mines, Reid's Cr. Goldfield (*ante*). *Yield:* Gold = 2 oz. to 5 oz. per ton. *Ref.* A.R.D.M., p. 34 (1894).

4993. —— ——. *Assoc.with* Gold, Mispickel, Galena, Zinc Blende, and Stibnite, in quartz reef. *Loc.* Reid's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885), and A.R.D.M., p. 34 (1894).

4993A. —— ——. *Assoc.with* Copper Pyrites. *Loc.* Wolca Copper Lodes, 6 miles N.N.W. of Mt. Perry, 73 miles (by rail and road) W.S.W. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 21, p. 22 (1885).

4994. —— ——. *Assoc.with* Gold and Molybdenite, in quartz. *Loc.* P. Area (28), Perry Scrub, St. Agnes Cr., 15 miles S. of Gingin Rail. Stn. (Mt. Perry line), 44 miles (by rail and road) S.W. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 184, p. 9 (1903).

4995. —— ——. *Assoc.with* Siderite and Common Opal, replacing Coal. *Loc.* Riverbank Colliery, 1¼ mile S.E. of Howard Rail. Stn., Burrum Coalfield. *Co.* Bowen (*ante*). *Ref.* L.C.B.

4996. —— ——. *Assoc.with* Galena and Zinc Blende, with traces of Gold and Silver. *Loc.* Gt. Southern Mine, 4½ miles W. of Biggenden Rail. Stn., 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* O.R.

4997. —— ——. *Assoc.with* Gold, Hematite, Magnetite, Mispickel, Bismuth (native), Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, Chalcedony, and Epidote. *Loc.* Biggenden **Mine**, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Contents:* Gold = from 1 oz. to 4 oz. per ton, Metallic Bismuth = 10 per cent. *Ref.* G.S.Q. Pubs. 125, p. 53 (1897), 173 (1902), 194 (1904), and G.S.M.

4998. —— ——. *Assoc.with* Gold, Magnetite, and Calcite, in quartz reef. *Loc.* Mt. Hastings Mine, Biggenden Cr., 5 miles S.byW. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 60, p. 4 (1890).

4999. —— ——. *Assoc.with* Gold, Silver, Copper Pyrites, Cuprite, Tenorite, Malachite, Mispickel, Hematite, Zinc Blende, Bismuthinite, Pyrrhotite, and Calcite, in quartz reef. *Loc.* Commonwealth Mine, nr. Mt. Havilah, 2¾ miles S.S.W. of Degilbo (Gayndah Br. line). *Co.* Cook (*ante*). *Assay:* Copper = 3·5 per cent., Bismuth = 1·1 per cent., Zinc = 0·3 per cent., Silver = 6 oz. 13 dwt. 8 gr. per ton, Gold = 16 gr. per ton. *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), and 207, pp. 14-19 (1907).

5000. —— ——. *Assoc.with* Gold, Silver, Mispickel, Copper Pyrites, Native Bismuth, Bismuthinite, Magnetite, and Ironstone, in lode. *Loc.* Don Jon Bismuth Mine, ¼-mile S. of Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 173, p. 4 (1902), and 207, pp. 13, 14 (1907).

5001. —— ——. *Assoc.with* Gold, Bismuthinite, Bismutite, and Mispickel. *Loc.* Kent's Knob Mine, ¼-mile N.W. of Mt. Shamrock, 5½ miles W.N.W. of Degilbo Rail. Stn. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 25, p. 2 (1886), and B.D.

5002. —— ——. *Assoc.with* Gold, Mispickel, Bismuth (native), and Joseite. *Loc.* Mt. Shamrock Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Analysis:* S_1O_2 = 44·90, Al_2O_3 = 8·82, Fe = 18·98, partly combined with S and As, and partly oxidized, S = 11·71, As = 2·07, CaO = 2·80, MgO = 1·05, Te = 0·56, Bi = 1·26, $Co_2 \times O$ and H_2 and $O \times Au$ = 7·85. *Ref.* A.R.D.M., p. 187 (1894).

5003. —— ——. *Assoc.with* Gold, in quartz reefs. *Loc.* Berrie Paterson, Bushnell's Advance P.A., Leishman's William Tell, Nil Desperandum, Norris's P.A. (261), and Philadelphia Mines, Paradise Goldfield, 8 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 68, pp. 1-3 (1891).

5004. Iron Pyrites. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz reef. *Loc.* Paradise P.C., Paradise Goldfield (*ante*). *Ref.* G.S.Q. Pub. 68, p. 1 (1891).

5005. —— ——. *Assoc.with* Gold, Silver, Galena, and Zinc Blende, in quartz and calcite. *Loc.* Stanton-Harcourt Diggings, Stony Cr., 11 miles N. of Degilbo Rail. Stn. (Gayndah line), 17 miles S.S.W. of Childers Rail. Stn. (North Coast line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 25, p. 4 (1886).

5006. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Young Australian Gold Mine, Por. 53v, Woowoonga, 5 miles (by road) N.W. of Biggenden Rail. Stn. (Gayndah line), 59 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 185, pp. 3, 4 (1903).

5007. —— ——. *Assoc.with* Copper Pyrites, Azurite, Marcasite, and Galena, in quartz. *Loc.* Black Watch Reef, Scrub Paddock Diggings, 23 miles N.N.E. of Nanango, and 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Returns:* Gold = 1 oz. 9 dwt. 4 gr., Silver = 1 oz. 16 dwt. 4 gr. per ton. *Assay:* Gold = 4 oz. 3 dwt. 1 gr., Silver = 9 oz. 17 dwt. 21 gr per ton. *Ref.* G.S.Q. Pub. 29, p. 3 (1886).

5008. —— ——. *Assoc.with* Gold and Hematite, in quartz reef. *Loc.* ½-mile N.E. of Black Watch Reef, Scrub Paddock Diggings (*ante*). *Assay of Mundic:* Gold = 2½ oz. per ton. *Assay of Hematite:* Gold = 15 dwt. and 9 dwt. 19 gr. per ton. *Ref.* G.S.Q. Pub. 29, p. 4 (1886).

5009. —— ——. *Assoc.with* Copper Pyrites and Magnetite, in diorite. *Loc.* M.L. (25), Gympie Copper Mines, Ltd., head of Gooroomjam Cr., Scrub Paddock Diggings (*ante*). *Ref.* G.S.Q. Pub. 169, pp. 7-9 (1901).

5010. —— ——. *Assoc.with* Galena. *Loc.* M.L. (26), Gympie Copper Mines, Ltd., Gooroomgan Cr., Scrub Paddock Diggings (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 169, p. 9 (1901).

5011. —— ——. *Assoc.with* Gold, Silver, Mispickel, Copper Pyrites, Tenorite, and Galena. *Loc.* P.A. (2), Gympie Copper Mines, Ltd., Gooroomjam Cr., Scrub Paddock Diggings (*ante*). *Assay: See* No. 2139. *Ref.* G.S.Q. Pub. 169, pp. 9, 10 (1901).

5012. —— ——. *Assoc.with* Gold and Copper, in quartz. *Loc.* Wild Horse Reef, Scrub Paddock Diggings (*ante*). *Ref.* G.S.Q. Pub. 29, p. 3 (1886).

5012A. —— ——. *Assoc.with* Gold, Copper Pyrites, Galena, Zinc Blende, and Calcite, in chlorite and ironstone lode. *Loc.* Ban Ban Station, 12 miles S.E.byE. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* Burnett. *Ref.* A.R., p. 179 (1909).

5013. —— ——. *Assoc.with* Copper Pyrites, Malachite, and Azurite, in chloritic rock. *Loc.* Robina or Mt. Hawick Copper Mine, 12 miles W.S.W. of Degilbo Rail. Stn. *Co.* Mackenzie (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 150, p. 4 (1900).

5014. —— ——. *Assoc.with* Gold, Silver, and Mispickel, in quartz reef. *Loc.* Auburn Falls Gold Mine, 32 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 207, p. 11 (1907), and A.R., p. 56 (1906).

5014A. —— ——. *Assoc.with* Gold, Mispickel, Limonite, and Manganese-dioxide, in quartz. *Loc.* Cadarga Cr. Gold Mines, between Cadarga Cr. and Auburn R., 33 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle (*ante*). *Ref.* Q.G.M.J., vol. 5, pp. 162, 163 (1904), and G.S.Q. Pub. 207, p. 11 (1907).

5015. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* All Nations Reef, Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 43, p. 4 (1887).

5016. —— ——. *Assoc.with* Gold, Galena, and Mispickel, in quartz reef. *Loc.* Cosmopolitan Lease (42), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 102, p. 3 (1895).

5017. —— ——. *Assoc.with* Gold, Mispickel, and Zinc Blende, in quartz. *Loc.* Mt. Rose P.C. (Mt. Rose Reef), Eidsvold Goldfield (*ante*). *Ref.* G.S.M.

5018. —— ——. *Assoc.with* Gold and Zinc Blende, in quartz and calcite. *Loc.* Mt. Rose No. 1 W. Lease (41), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 102, p. 2 (1895).

5019. —— —— *Assoc.with* Gold, Ironstone, and Galena, in quartz reef. *Loc.* Mt. Rose United Mine (Mt. Rose Reef), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, p. 2 (1887).

5020. —— ——. *Assoc.with* Gold, Anglesite, Redruthite, and Zinc Blende, in quartz reef. *Loc.* Victory United Lease (33), Eidsvold Goldfield (*ante*).

5021. —— ——. *Assoc.with* Gold, Silver, and Limonite, in quartz. *Loc.* Apple-tree Lease, Cabbage-tree Creek, Mt. Cannindah Mineral Field, 13 miles S.W. byS. of Many Peaks Rail. Stn. (Boyne-Valley line), 71 miles (by rail and road) S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. *Assay:* Gold = 1 oz. 4 dwt. 19 gr., and Silver = 24 oz. 6 dwt. 2 gr. per ton. *Ref.* G.S.Q. Pubs. 113, p. 9 (1896), 143, p. 4 (1899).

5022. —— ——. *Assoc.with* Copper Pyrites and Magnetite. *Loc.* Mt. Cannindah Stn., head of Cabbage-tree Cr., br. of Splinter Cr., Mt. Cannindah Mineral Field (*ante*). *Ref.* A.R., p. 99 (1907).

5023. —— ——. *Assoc.with* Cassiterite and Tourmaline, in quartz. *Loc.* Keating, Madden, and Co.'s Tin Lease, Mt. Amos, 20 miles S.S.E. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 15 (1887).

5023A. —— ——. *Assoc.with* Mispickel, and Cobalt, in quartz lode. *Loc.* Asmus Claim, Mt. Hartley, head of Wallaby Cr., 4 miles E. of Rossville, 26 miles S.S.E. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* A.R., p. 199 (1909).

5024. —— ——. *Assoc.with* Cassiterite, Tourmaline, and Mispickel, in talc. *Loc.* Collingwood Tin Lease (81), Mt. Leswell, 1½ mile S.S.W. of Rossville, 26 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 4 (1891).

5025. —— ——. *Assoc.with* Cassiterite and Tourmaline, in quartzite. *Loc.* Lease (96), Mulligan's Gully, Mt. Leswell (*ante*). *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

5026. —— ——. *Assoc.with* Gold and Silver, in quartz. *Loc.* Last Hit Reef, Munburra, Starcke Goldfield, 40 miles N.N.W. of Cooktown. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 209, p. 9 (1907), and 223, pp. 31, 32 (1909).

5026A. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Monte Carlo (Sea View) Mine, Munburra (*ante*). *Ref.* G.S.Q. Pub. 223, p. 37 (1909).

5027. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Anglo-Saxon Reef, Limestone Cr., 60 miles S. of Laura Rail. Stn. (Cooktown line), 127 miles (by rail and road) S.W. of Cooktown. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.Q. Pub. 46, p. 1 (1889).

5028. —— ——. *Assoc.with* Gold, Fluorspar, Pinite, and Calcite, in quartz reef. *Loc.* Daisy Mine, Coen Goldfield, 45 miles (by road) N.N.W. of Port Stewart, 189 miles N.W. of Cooktown. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 20 (1901), and G.S.M.

5029. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Llankelly Mine, Coen Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 22 (1901).

5030. —— ——. *Assoc.with* Gold and Hematite, in quartz. *Loc.* All Nations Reef, Ebagoolah, Hamilton Goldfield, 33 miles W. of Port Stewart, 173 miles N.W.byW. of Cooktown. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 5 (1901).

5031. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Johannesburg (Lord Roberts) Reef, 3½ miles S.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 7 (1901).

5032. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Gold Mount Reef, 6 miles S.E. of Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 163, pp. 8, 9 (1901), and 209, p. 15 (1907).

5033. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Hidden Treasure Reef, Ebagoolah, Hamilton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 10 (1901).

5034. —— ——. *Assoc.with* Gold and Hematite, in quartz. *Loc.* B.B. Reef, McLeodsville, 6 miles N.N.W. of Thornborough, 25 miles N. of Dimbullah Rail. Stn., Hodgkinson Goldfield. *Co.* Dagmar; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16 (116), p. 26 (1884).

5035. —— ——. *Assoc.with* Gold, Copper Pyrites, and Galena, in quartz. *Loc.* Victory Reef, McLeodsville (*ante*). *Ref.* G.S.Q. Pub. 16 (116), p. 27 (1884).

5036. —— ——. *Assoc.with* Copper Pyrites. *Loc.* Mt. Molloy Copper Mine, 17 miles S.S.W. of Port Douglas, 20 miles (by rail) N.N.W. of Biboohra Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Dagmar; *Dist.* Cook. *Assays: See.* No. 2143. *Ref.* A.R., p. 115 (1907).

5037. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Aurora Reef, Aurora Cr., 8 miles S.W. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 5 (1887).

5038. —— ——..*Assoc.with* Gold and Galena, in quartz. *Loc.* Redan Reef, Aurora Cr. (*ante*). *Ref.* G.S.Q. Pub. 151, p. 10 (1900).

5039. —— ——. *Assoc.with* Gold, Copper Pyrites, Mispickel, and Galena, in quartz and calcite. *Loc.* Balmoral Reef, 1½ mile W. of Castleton, 6½ miles S.S.E. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* Q.S.Q. Pubs. 35, p. 6 (1887), and 151, p. 12 (1900).

5040. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* The Big Reef, Castleton, 5 miles S.S.E. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 151, p. 12 (1900).

5041. Iron Pyrites. *Assoc.with* Copper Pyrites and Galena, in quartz. *Loc.* Sir Henry Havelock Reef, 27½ miles S.S.E. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 151, p. 12 (1900).

5042. —— ——. *Assoc.with* Gold, Copper Pyrites, Redruthite, Mispickel, Galena, and Zinc Blende, in quartz. *Loc.* Nil Desperandum Reef, Charleston, 140 miles (by rail) S.W. of Almaden Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), 151, p. 11 (1900), and 219, p. 14 (1909).

5043. —— ——. *Assoc.with* Gold, Pyrrhotite, Galena, and Zinc Blende, in quartz reef. *Loc.* Queenslander Mine, Charleston (*ante*). *Ref.* G.S.Q. Pubs. 151, p. 11 (1900), 219, p. 13 (1909).

5043A. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Battista Menine's Claim, Delaney R., Charleston (*ante*). *Ref.* A.R., p. 261 (1910).

5044. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Cumberland Reef, Cumberland, 12 miles W.byS. of Georgetown, Etherdige Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 5 (1887).

5044A. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Durham Consols Mine, Durham, 4 miles W. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* A.R., p. 323 (1911).

5045. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Durham Reef, Durham (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 4 (1887), and 219, pp. 10, 11 (1909).

5046. —— ——. *Assoc.with* Copper Pyrites and Pyrrhotite, in quartz. *Loc.* Havelock Mine, 5 miles S. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 219, p. 11 (1909), and O.R.

5047. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Lady Maria Reef, Georgetown, 20 miles N. of Charleston Rail. Stn., 160 miles (by rail and road) S.W. of Almaden Rail. Stn. (Chillagoe line), Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 151, p. 7 (1900).

5048. —— ——. *Assoc.with* Gold, Galena, Copper Pyrites, Mispickel, and Zinc Blende, in quartz. *Loc.* Papa Reef, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 35, p. 3 (1887).

5049. —— ——. *Assoc.with* Gold and Zinc Blende, in quartz. *Loc.* Spero Meliora Reef, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 35, p. 4 (1887).

5050. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz reef. *Loc.* St. George Mine, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 5 (1900).

5051. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Wexford Reef, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 6 (1900).

5052. —— ——. *Assoc.with* Gold, Galena, and Tenorite, in quartz reef. *Loc.* Young Wexford Mine, Georgetown (*ante*). *Ref.* G.S.Q. Pub. 151, p. 6 (1900), and G.S.M.

5053. —— ——. *Assoc.with* Gold, Hematite, and Limonite, in quartz. *Loc.* Caledonia Reef, Caledonia Cr., br. of Goldsmith's Cr., 24 miles S.S.E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

5054. —— ——. *Assoc.with* Gold, Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* International Reef, Rocky, Sandy Cr., 7 miles S.W.byS. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 151, p. 10 (1900), and 219, p. 9 (1909).

5055. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Stonewall Jackson Reef, Rocky, Sandy Cr. (*ante*). *Ref.* G.S.Q. Pub. 151, p. 10 (1900).

5055A. —— ——. *Assoc.with* Copper Pyrites and Galena, in granite. *Loc.* Stockman's Cr., 6 miles N.W. of Teesdale Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 234, p. 27 (1911).

5056. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Butcher Bird, Deceitful Susan, Merry Monarch, and Stockman Reefs, between Talbot and Machine Creeks, 10 miles S.E.byS. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 151, p. 11 (1900).

5056A. —— ——. *Assoc.with* Gold, Cervantite, and Stibnite, in quartz. *Loc.* Craig's Antimony Lease, Emily Reef, Northcote, 15 miles W. of Mareeba Rail. Stn., **Hodgkinson Goldfield.** *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16 (1885), and 125, p. 48 (1897).

5057. —— ——. *Assoc.with* Gold and Stibnite, in quartz. *Loc.* Emily Antimony Mine, Northcote (*ante*). *Ref.* G.S.Q. Pubs. 16 (116), p. 31 (1884), and 125, p. 48 (1897).

5058. —— ——. *Assoc.with* Gold, Mispickel, and Galena, in quartz reef. *Loc.* Just-in-Time Mine, Northcote (*ante*). *Ref.* G.S.Q. Pub. 16 (116), p. 28 (1884).

5059. —— ——. *Assoc.with* Gold, Galena, Mispickel, and Zinc Blende, in quartz reef. *Loc.* Union Gold Mine, Woodville, 13 miles W. of Thornborough, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16 (116), p. 28 (1884), and P.R.S.Q., vol. 4, p. 47 (1887).

5060. —— ——. *Assoc.with* Silver, Galena, Copper Pyrites, Mispickel, and Zinc Blende. *Loc.* Tornado Mine, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills Rail. Stn., **Walsh and Tinaroo Mineral Fields.** *Co.* Hodgkinson; *Dist.* Cook. *Analyses: See* No. 2155. *Ref.* P.R.S.Q., vol. 4, pp. 48, 52 (1887).

5061. —— ——. *Assoc.with* Galena and Zinc Blende, in lode. *Loc.* Victoria Amalgamated Silver Mine, Silverfield (*ante*). *Ref.* G.S.Q. Pub. 119, p. 32 (1897).

5062. —— ——. *Assoc.with* Cassiterite, Wolfram, Scheelite, Mispickel, and Copper carbonate, in diorite dyke. *Loc.* Chance Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 119, p. 18 (1897), and 125, p. 40 (1897).

5063. —— ——. *Assoc.with* Cassiterite, Wolfram, Chalcanthite, Fluorspar, and Chlorite. *Loc.* Glencairn Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883), and 125, p. 40 (1897).

5064. —— ——. *Assoc.with* Cassiterite and Galena. *Loc.* Great Wheal Busy Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 125, p. 46 (1897).

5065. —— ——. *Assoc.with* Cassiterite, in brecciated diorite. King of the North Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 25 (1883).

5066. —— ——. *Assoc.with* Cassiterite and trace of Galena, in diorite dyke, in porphyry country. *Loc.* Mountaineer Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 28 (1883).

5067. —— ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Mispickel, Ironstone, Cassiterite, Stannite, Wolfram, Fluorspar, and Chlorite, **in quartz** reef in elvan dyke. *Loc.* Stewart's "T" Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 26 (1883), and 119, p. 15 (1897).

5068. —— ——. *Assoc.with* Copper Pyrites, Copper carbonate, Chalcanthite, Mispickel, Marcasite, Cassiterite, Wolfram, Limonite, and Red and Yellow Ochre, in chlorite. *Loc.* Try Again and Chance Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883), and P.R.S.Q., vol. 4, p. 52 (1887).

5069. —— ——. Rose of Denmark Mine, Bamford, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* O.R.

5070. —— ——. *Assoc.with* Copper Pyrites and Galena, in quartz. *Loc.* Bamford (*ante*). *Ref.* A.R., p. 46 (1906).

5071. —— ——. *Assoc.with* Copper Pyrites, Zinc Blende, Galena, and Molybdenite. *Loc.* Bamford (*ante*). *Assay: See* No. 2167. *Ref.* A.R., p. 101 (1907).

5072. —— ——. *Assoc.with* Gold, Galena, and Hornblende, in quartz. *Loc.* Luxton's Mine, Mt. Luxton, Wet Cr., trib. of California Cr., 3 miles N.E. of Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay:* Gold = 150 oz. per ton. *Ref.* G.S.Q. Pub. 119 (1897).

5073. —— ——. *Assoc.with* Limonite, Galena, and Anglesite, in quartz reef. *Loc.* Near Mt. Luxton, Wet Cr., trib. of California Cr. (*ante*). *Assay:* Silver = 39 oz. per ton. *Ref.* G.S.Q. Pub. 119, p. 42 (1897).

5073A. —— ——. *Assoc.with* Monazite, Wolfram, Molybdenite, Cassiterite, and Mispickel, in quartz and mica, in greisen country. *Loc.* California Cr. Mines, nr. Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

5074. —— ——. *Assoc.with* Copper Pyrites, Bornite, Cuprite, Tenorite, Tetrahedrite, Tile Ore, Malachite, Atacamite, and Hematite, in quartz-felspar lode. *Loc.* Ruddygore Mine, Arbinjoe Cr., 2 miles N.E. of Chillagoe, 141 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 10, 11 (1898).

5075. —— ——. *Assoc.with* Copper Pyrites, Mispickel, Galena, and Cassiterite, in lode. *Loc.* Iolanthe Tin Mine, Koorboora, 108 miles (by rail) S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 11 (1891).

5076. Iron Pyrites. *Assoc.with* Copper Pyrites, Mispickel, Galena, Cassiterite, and Mica, in felspathic rock. *Loc.* Shakespeare Tin Mine, Koorboora (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1894).

5077. —— —— (massive). Penzance Mine, Mt. Redcap, 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), 152 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

5078. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Jordan Gold Mine, Jordan Cr. Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 157, p. 1 (1901).

5079. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Queen Constance P.C., Mareeba Goldfield, 5 miles S.E. of Mareeba Rail. Stn. (Cairns line), 51 miles (by rail and road) W.S.N. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Nares (*ante*). *Ref.* G.S.Q. Pub. 97, p. 5 (1894).

5080. —— ——. *Assoc.with* Gold, Stibnite, and Zinc Blende, in quartz lode. *Loc.* Queen Constance 5 N. Mine, Mareeba Goldfield (*ante*). *Ref.* G.S.Q. Pub. 97, p. 6 (1894).

5081. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Walter Hodgson Reef, Butcher's Cr., Mulgrave Goldfield, 9 miles S.S.W. of Mulgrave Rail. Stn. *Co.* Nares; *Dist.* Cook.

5082. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Coral Queen Reef, Russell Extd. (Towalla) Goldfield, 18 miles W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 97, p. 2 (1894).

5083. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Rose and Shamrock Claim, French's Cr., Russell Extd. (Towalla) Goldfield (*ante*). *Assay:* Gold = 3 oz. 10 dwt. per ton. *Ref.* G.S.Q. Pub. 97, p. 4 (1894).

5084. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Towalla King Claim, Cooliman Cr., Russell Extd. (Towalla) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 97, p. 4 (1894).

5085. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Victory Mine, Combo Cr., Russell Extd. (Towalla) Goldfield (*ante*). *Assay:* Gold = 2 oz. 10 dwt. per ton. *Ref.* G.S.Q. Pub. 97, p. 2 (1894).

5086. —— ——. *Assoc.with* Gold, Silver, and Copper Pyrites, in quartz reef. *Loc.* Wise's Shaft, Wise's Knob, Oaks Goldfield, 22 miles S.byE. of Einasleigh Rail. Stn. *Co.* Percy; *Dist.* Cook. *Ref.* A.R., p. 164 (1908).

5086A. —— ——. *Assoc.with* Galena, Massicot, Cerussite, Mispickel, and Zinc Blende, in lode. *Loc.* Chillagoe Mine, off Wise's Knob, Oaks Goldfield (*ante*). *Ref.* A.R., p. 187 (1909).

5086B. —— ——. *Assoc.with* Copper Ore and Galena, in porphyry. *Loc.* Mt. Jardine, 12 miles N. of Einasleigh Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Tate; *Dist.* Cook. *Ref.* G.S.Q. Pub. 234, p. 27 (1911).

5087. —— ——. *Assoc.with* Gold and Galena, in quartz veins in granite country. *Loc.* Possession Is., 15 miles S.E. of Thursday Is., **Torres Strait.** *Co.* Somerset; *Dist.* Cook. *Assay:* Gold = 1 oz. 17 dwt. 5 gr., and Silver = 1 oz. 1 dwt. 19 gr. *Ref.* G.S.Q. Pub. 180, p. 22 (1902).

5087A. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Hammond Is., Torres Strait., 1½ mile N. of Thursday Is. *Co.* Torres; *Dist.* Cook. *Assays:* (1) Gold = 23 oz. per ton. (2) Gold = 8 oz. per ton. *Ref.* A.R., p. 191 (1909).

5088. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Brilliant Mine (Brilliant and Parallel Reefs), Horn Is. Goldfield, 3 miles S.E. of Thursday Is., Torres Strait. *Co.* Torres (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

5089. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz reef. *Loc.* Cornucopia Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

5090. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Dead Cat Mine, Good Luck Reef, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 3 (1896).

5091. —— ——. *Assoc.with* Gold, Copper Pyrites, Galena, and Zinc Blende, in quartz reef. *Loc.* Eclipse Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 6 (1896), and G.S.M.

5092. —— ——. *Assoc.with* Gold, in quartz and felspar. *Loc.* Golden Gate Mine, Mystery (Dead Cat) Reef, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 3 (1896).

5093. —— ——. *Assoc.with* Scorodite and Mispickel, in quartz reef. *Loc.* Gummo's Reefing Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 150, p. 13 (1900).

5094. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Gympie Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

5095. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Italian Mine (Good Luck and Italian Reefs), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112 (1896).

5096. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Mystery P.C. (Dead Cat Reef), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 2 (1896).

5097. —— ——. *Assoc.with* Gold, in quartz. *Loc.* New Chum Mine (Dead Cat Reef), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 3 (1896).

5098. —— ——. *Assoc.with* Gold, Copper Pyrites, Galena, and Zinc Blende, in quartz reef. *Loc.* Pioneer Mine (Pioneer Reef), Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

5099. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Rosetta Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

5100. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Smith's Reef, Horn Is. Goldfield (*ante*). *Ref.* G.S.M.

5101. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* Triumph Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

5102. —— ——. *Assoc.with* Copperas. *Loc.* Gilberton, 48 miles S.byE. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 72 (1887).

5103. —— ——. *Assoc.with* Copper Pyrites, Azurite, Mispickel, Cassiterite, and Zinc Blende. *Loc.* Ballandean Tin Mine, Severn R., 14 miles (by rail) S. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.M., B.D., and L.C.B.

5104. —— ——. *Assoc.with* Galena, Mispickel, and Zinc Blende. *Loc.* Ballandean Tin Mine, Severn R. (*ante*). *Ref.* G.S.Q. Pub. 125, pp. 29, 30 (1897).

5105. —— ——. *Assoc.with* Silver. *Loc.* Border Chief Silver Mine, Jibbinbar, 20½ miles S.byW. of Stanthorpe Rail. Stn. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 125, p. 30 (1897).

5106. —— ——. *Assoc.with* Silver, Galena, Mispickel, and Zinc Blende. *Loc.* Jibbinbar Silver Mine, Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 125, p. 30 (1897).

5107. —— ——. *Assoc.with* Mispickel, with traces of Copper and Mica, in quartz and felspar. *Loc.* Mogg's Mine, Sel. (26), Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

5108. —— ——. *Assoc.with* Gold, Limonite, Hematite, and Manganese-dioxide, in quartz. *Loc.* Glenelg Reef, nr. Oakey Cr., 9 miles E. of Glenbar Hd. Stn., 55 miles (by road) W.S.W. of Warwick. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 40, pp. 1, 2 (1887).

5109. —— ——. *Assoc.with* Cassiterite and Wolfram, in quartz. *Loc.* Brere's Claim, Pikedale Cr., 9 miles W.byN. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 47 (1898).

5110. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Cameronian Reef, Pikedale Goldfield, 20 miles N.W.byN. of Stanthorpe Rail. Stn. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 10 (1892), and 105, p. 9 (1895).

5111. —— ——. *Assoc.with* Gold and Mispickel, in quartz and calcite. *Loc.* Kaffir Chief Mine, Pikedale Goldfield (*ante*). *Ref.* (and *Assays*) G.S.Q. Pubs. 105, pp. 7, 8 (1895), and 120, pp. 73-77 (1898).

5112. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Royal Standard Mine, Pikedale Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 78 (1898).

5113. —— ——. *Assoc.with* Mispickel, Scorodite, Cassiterite, Wolfram, and Molybdenite, in quartz. *Loc.* P.A. 48 (Sluicing Claim), Severn R., 6 miles W. of Ballandean, 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 191, p. 10 (1904).

5114. —— ——. *Assoc.with* Galena, Copper Pyrites, Mispickel, and Zinc Blende, in lode. *Loc.* Silver Queen Mine, Severn R. (*ante*). *Assays: See* No. 2834. *Ref.* G.S.Q. Pub. 191, pp. 24, 39 (1904).

5115. —— ——. *Assoc.with* Gold, Silver, and Copper carbonate, in quartz reef. *Loc.* Sel. (24), nr. Sundown Cr., Severn R., 11 miles W.S.W. of Ballandean, 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

5116. —— ——. *Assoc.with* Galena and Copper Pyrites, in chlorite and quartz. *Loc.* Mrs. Allison's Mine, Sugarloaf, 7 miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 120, p. 87 (1898).

5117. Iron Pyrites. *Assoc.with* Gold, Pyrargyrite, Copper Pyrites, Cuprite, Tile Ore, Azurite, Malachite, Galena, Cerussite, Zinc Blende, Smithsonite, Ironstone, and Calcite. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pubs. 120 (1898), 191, pp. 25-36 (1904).

5118. —— ——. *Assoc.with* Selenite, in shale. *Loc.* Silver Spur Mine (*ante*). *Ref.* G.S.Q. Pub. 150, p. 14 (1900).

5119. —— ——. *Assoc.with* Mispickel, Scorodite, Cassiterite, Zinc Blende, and Hornblende, in slate. *Loc.* Beacroft's Workings, in Sundown Mine, Sundown Cr., Severn R., 12 miles S.W.byW. of Ballandean, 26 miles (by rail and road) S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 191, p. 23 (1904).

5120. —— ——. *Assoc.with* Gold, Copper Pyrites, and Talc, in quartz reef. *Loc.* Von Moltke Mine, Leyburn Goldfield, 28 miles W.byN. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* (and *Assays*) G.S.Q. Pub. 120, p. 7 (1898).

5121. —— ——. *Assoc.with* Gold and Limonite, in quartz. *Loc.* Clare's Reef, Talgai Goldfield, 21 miles W.N.W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 205, p. 28 (1906).

5122. —— ——. *Assoc.with* Galena, Copper Pyrites, and Ferro-Calcite, in quartz reef. *Loc.* Louisa Mine, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 120, p. 55 (1898), 159, p. 1 (1900), and 186, pp. 17, 18 (1903).

5123. —— ——. *Assoc.with* Gold. *Loc.* Queenslander Mine, Big Hill, 3 miles W. of Pratten, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 87, p. 7 (1895), 120, p. 61 (1898).

5124. —— ——. *Assoc.with* Gold, in quartz. *Loc.* St. Patrick P.C., Saw Gully, 1 mile S.W. of Pratten, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 186, p. 15 (1903), 205, p. 31 (1906).

5125. —— ——. *Assoc.with* Gold and Mispickel, in quartz reef. *Loc.* 2½ miles S.W. of Talgai Stn., 23½ miles W.N.W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Assays:* (1) Gold = 3 oz. per ton. (2) Gold = 2 oz. 15 dwt., and Silver = 3 oz. per ton. *Ref.* G.S.Q. Pub. 120 (1898).

5126. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Cullan's Twins P.A. (Middle, Northern, and Southern Reefs), Thane's Cr. Goldfield, 24 miles W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 205, pp. 34-36 (1906).

5127. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Eldorado Mine, Thane's Cr., Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 68 (1898).

5128. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Guiding Star Reef, 6½ miles N. of Pratten, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 120, p. 70 (1898), and 205, pp. 32, 33 (1906).

5129. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Mountain Maid Reef, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 87, pp. 8, 9 (1892).

5130. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Try Again Reef, Thane's Cr., Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 120, p. 69 (1898).

5131. —— ——. *Assoc.with* Copper Pyrites, Covelline, Malachite, and Chrysocolla, in quartz, quartzite, and schist. *Loc.* Ardath Copper M.L. (705), (Mt. Hope Group), Green's Cr., 4 miles S.W. of Mt. Hope, 53 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, p. 47 (1908).

5132. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Covelline (?), Tile Ore, Malachite, Limonite, and Calcite, in chloritic schist. *Loc.* Monarch Senior M.C. (352), (Mt. Hope Group), 3 miles E. of Mt. Hope, 56 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 42, 43 (1908).

5133. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Limonite, Malachite, and Chrysocolla, in hornblendic schist. *Loc.* Mt. Birnie M.L. (686, etc.), (Mt. Birnie Group), Burke R., 74½ miles S.S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, p. 367 (1908).

5134. —— ——. *Assoc.with* Limonite, Redruthite, Tile Ore, Tenorite, and Malachite, in slate and gossan. *Loc.* Labour Victory R.C. (29), Agate Downs Group, 53 miles S. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, p. 12 (1908).

5135. —— ——. *Assoc.with* Gold, Cuprite, Tile Ore, Tenorite, Malachite, Atacamite, Chalcanthite, Limonite, Calcite, and Chalcedony, in slate and gossan. *Loc.* Mt. Elliott R.C. (3, etc.), (Mt. Elliott Group), Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin (*ante*). *Assays:* (1) Copper = 18 per cent., Gold = 3 dwt. per ton. (2) Copper = 16·5 per cent., Gold = 2 dwt. per ton. (3) Copper = 15·2 per cent., Gold = 2 dwt. per ton. *Ref.* G.S.Q. Pub. 215, p. 2 (1908).

5136. —— ——. *Assoc.with* Galena and Cassiterite, in quartzite. *Loc.* Victoria Tin Mine, Coolgarra, 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

5137. —— ——. *Assoc.with* Göthite, Mispickel, Hematite, Limonite, Azurite, Malachite, Cassiterite, Wolfram, Websterite, Chlorite, Penninite, and Topaz, in quartz lode. *Loc.* Tin Mines, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

5138. —— ——. *Assoc.with* Zinc Blende and Galena. *Loc.* P.C., Dry R., br. of Wild R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

5139. —— ——. *Assoc.with* Cassiterite and Fluorspar, in quartz and quartzite. *Loc.* Levant Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns-Herberton line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 15 (1883).

5140. —— ——. *Assoc.with* Cassiterite, Wolfram, and Fluorspar, in quartz and calcite. *Loc.* Leviathian Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 14 (1883).

5141. —— ——. *Assoc.with* Cassiterite, in alluvial deposits, and in lode. *Loc.* Phœnix Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 15 (1883).

5142. —— ——. *Assoc.with* Cassiterite, in steatite veins in diorite dyke. *Loc.* St. Mungo Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

5143. —— ——. *Assoc.with* Gold, Silver, Hematite, Magnetite, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, Chalcanthite, Mispickel, Zinc Blende, Cerussite, and Minium, in quartz lodes. *Loc.* Mt. Garnet Mine, Return Cr., Wild R., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

5143A. —— ——. *Assoc.with* Copper Pyrites and Rhodochrosite. *Loc.* In br. of Return Cr., between Mt. Garnet and Coolgarra, 6 miles N.byE. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

5144. —— ——. *Assoc.with* Galena, Cerussite, Copper Pyrites, Zinc Blende, etc., in slate and volcanic tuffs. *Loc.* Lancelot Mines, Newellton (Silver Valley), 10 miles S.W. of Herberton, 10 miles S.E.byS. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* L.B. 1, p. 479 (1883).

5145. —— ——. *Assoc.with* Gold, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Alexandra Hill Mine, **Charters Towers Goldfield,** 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

5146. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Band of Hope Lease, Victoria Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5147. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* Blue Peter Lease, and No. 1 E. (Blue Peter Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5148. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Bonnie Doon Lease (Bonnie Doon Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5149. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Bonnie Dundee Lease (Queen, Victory, and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

5150. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Brilliant Block Lease, Brilliant Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5151. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Brilliant Central G.M. Co.'s Lease (Brilliant, Victory, and Queen Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5152. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Brilliant Extended Lease (Brilliant Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

5153. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Brilliant P.C., Brilliant Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5154. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Brilliant and St. George Untd. G.M. Co.'s Lease (St. George, Brilliant, and Victory Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5155. —— ——. *Assoc.with* Gold, Galena, Zinc Blende, and Chlorite, in quartz. *Loc.* Bryan O'Lynn Mine, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, pp 36, 51 (1887).

5156. Iron Pyrites. *Assoc.with* Gold, Copper Pyrites, Galena, and Zinc Blende, in quartz and calcite. *Loc.* Carrington Lion 1 and 2 E. Lease (Lion Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5157. —— ——. *Assoc.with* Gold, Copper Pyrites, Galena, Zinc Blende, and Barytes, in quartz and calcite. *Loc.* Carrington's United Mines, Ltd., Lease (Lion Reef), Charters Towers Goldfield. *Ref.* W.C.T.

5158. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Clark's Brilliant Worcester and Victory Lease (Victory Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5159. —— ——. *Assoc.with* Gold, Galena, Zinc Blende, Copper Pyrites, and Copper carbonate. *Loc.* Comstock or Stockholm Reef, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

5160. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Craven's Caledonia Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5161. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Dan O'Connell Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5162. —— ——. *Assoc.with* Gold, Galena, in quartz. *Loc.* Day Dawn Block and Wyndham Lease (Day Dawn and Wyndham Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

5163. —— ——. *Assoc.with* Gold, Galena, in quartz. *Loc.* Day Dawn Gold Mines, Ltd., Lease (Day Dawn Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5164. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* Day Dawn P.C. (Day Dawn, Talisman, Peabody, and North Australian Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and A.R.D.M., p. 33 (1894).

5165. —— ——. *Assoc.with* Gold, Zinc Blende, and Galena, in quartz. *Loc.* Day Dawn 3A West, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5166. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Day Dawn 5 W. Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5167. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Deep Levels Mines of Charters Towers (Brilliant Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5168. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* East Mexican G.M. Lease (Day Dawn and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5169. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Golden Alexandra Lease, Golden Alexandra Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5170. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Golden Gate Mine (2 W. Level), Charters Towers (*ante*). *Ref.* G.S.M.

5171. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Hit or Miss Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5172. —— ——. *Assoc.with* Gold and Zinc Blende, in quartz. *Loc.* Hope Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5173. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Hope Reef, 2 miles E.S.E. of Millchester, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5174. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Imperial G.M. Lease (Imperial Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5175. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Kelly's Queen Block Lease (Brilliant and Victory Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5176. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Lady Maria Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5177. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Mafeking P.C. G.M. Lease (Mafeking Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5178. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Marshall's Queen G.M. Lease (Queen, Brilliant, and Victory Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5179. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Mary and Rainbow Reefs, Charters Towers (*ante*). *Ref.* G.S.M.

5180. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Mexican Reef, Charters Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 28 (1879).

5181. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Millchester G.M. Lease (Old Identity Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5182 —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Millett's Wellington Mine, Charters Towers Golfideld (*ante*). *Ref.* G.S.M.

5183. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* Mills's Day Dawn United G.M. Lease (Day Dawn Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5184. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* New Brilliant Freeholds G.M. Lease (Day Dawn and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5185. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* New Craven's Caledonia G.M. Lease (Caledonia, Just-in-Time, and Victoria Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5186. —— ——. *Assoc.with* Gold and Mispickel, in quartz reef. *Loc.* New Imperial Mine, Charters Towers Goldfield. *Assay: See* No. 3919. *Ref.* A.R.D.M., p. 185 (1894).

5187. —— ——. *Assoc.with* Gold and Galena, in quartz and calcite. *Loc.* New Queen G.M. Lease (Queen, Brilliant, and Victory Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5188. —— ——. *Assoc.with* Galena and Zinc Blende, in quartz. *Loc.* New Towers Extd. Mine, Charters Towers Goldfield (*ante*). *Mineral Percentages:* Iron Pyrites = 61·2 per cent.; Zinc Blende = 21·0 per cent.; Galena = 2·2 per cent.; Quartz = 15·6 per cent. *Yield:* Gold = 3·25 oz. per ton. *Ref.* A.R.D.M., p. 33 (1894).

5189. —— ——. *Assoc.with* Gold, Calcite, Gypsum, and Chalcedony, in quartz. *Loc.* North Australian Reef, Charters Towers (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 36 (1887).

5190. —— ——. *Assoc.with* Gold, Zinc Blende, and Barytes, in quartz reef. *Loc.* Old Identity Mine, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 36 (1887).

5191. —— ——. *Assoc.with* Gold and Zinc Blende, in quartz. *Loc.* Old Imperial Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5192. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Papuan Block Mine (Victory Reef), Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5193. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Papuan, Brilliant, and Victoria G.M. Lease (Brilliant, Victoria, and Victory Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5194. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* Pfeiffer's Day Dawn Lease (Day Dawn Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5195. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Phœbe G.M. Lease (Victory and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5196. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Queen Central G.M. Lease (Victoria Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5197. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Queen Central Block G.M. Lease (Victoria Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5198. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* Queen Deep Mines Lease (Queen Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5199. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Queen's Cross G.M. Co.'s Lease (Victoria and Just-in-Time Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5200. —— ——. *Assoc.with* Gold, Galena, Zinc Blende, Calcite, Gypsum, and Chlorite, in quartz. *Loc.* Queen Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 26 (1879), P.R.S.Q., vol. 4, pp. 36, 47 (1887), G.S.M., and W.C.T.

5201. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Queenslander Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5202. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Quinn's Block G.M. Lease, Millchester Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5203. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Rainbow Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5204. —— ——. *Assoc.with* Gold and Galena, in quartz and calcite. *Loc.* Rogers's Millchester Block, Millchester Reef, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5205. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Ruby G.M. Lease (Ruby and Rose of England Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5206. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Ruby United G.M. Lease (Ruby Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5207. Iron Pyrites. *Assoc.with* Gold and Galena, in quartz. *Loc.* Stockholm (Brilliant G.M. Co.) Lease (Stockholm Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5208. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz reef. *Loc.* St. Patrick Block Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 28 (1879).

5209. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* Sunburst P.C., Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

5210. —— ——. *Assoc.with* Gold and Galena, in serpentine and quartz. *Loc.* Sunlight Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5211. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Talisman and New Dawn G.M. Lease (Peabody and North Australian Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5212. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Union Jack Consld. Mines (Victoria Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5213. —— ——. *Assoc.with* Gold, Mispickel, and Galena, in quartz. *Loc.* Victoria Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5214. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Victoria and Caledonia Block Lease (Just-in-Time and Victoria Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5215. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Victoria and Queen G.M. Lease (Victoria and Caledonia Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

5216. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Victory, Charters Towers G.M. Lease (Victory and Brilliant Reefs), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5217. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Victory G.M. Lease, Victory Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

5218. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Wallis's Day Dawn Lease (Day Dawn Reef), Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

5219. —— ——. *Assoc.with* Copper Pyrites and Galena, in quartz. *Loc.* Livingstone Reef, 1 mile S.S.E. of Bluff Stn., near Mt. Leyshon, 19 miles S.E.byS. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

5220. —— ——. *Assoc.with* Gold, Magnetite, Limonite, Hematite, Chalcanthite, Manganese-dioxide, and Talc, in quartz and porphyry. *Loc.* Mt. Leyshon, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.Q. Pubs. 18, p. 2 (1885), and 73, p. 13 (1891).

5221. —— ——. *Assoc.with* Gold, Copper Pyrites, and Copper carbonate, in quartz. *Loc.* Mt. Leyshon Mine (*ante*). *Ref.* W.C.T.

5222. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Mt. Mawe, close to Mt. Leyshon (*ante*). *Ref.* G.S.Q. Pub. 18, p. 2 (1885).

5223. —— ——. *Assoc.with* Gold, Hematite, and Pyrrhotite, in quartz. *Loc.* Greasy Bill's Reef, Pyramids or Seventy-mile Diggings, 3½ miles N.N.E. of Mt. Leyshon. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 1, p. 19 (1879).

5224. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Swain's Reef, Pyramid or Seventy-mile Diggings (*ante*). *Ref.* G.S.Q. Pub. 73 (1891).

5224A. —— ——. *Assoc.with* Gold. *Loc.* Top of Range, between the Charters Towers and Ravenswood Roads. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 2, p. 2 (1879).

5525. —— ——. *Assoc.with* Malachite, Magnetite, Ironstone, Graphite, and Calcite. *Loc.* Double-Barrel Cr. (Manton) (Gt. Northern line), 27 miles (by rail) S. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* L.B. 2, p 729 (1892).

5226. —— ——*Assoc.with* Gold, Hematite, Malachite, and Garnet, in calcite lode. *Loc.* Hein's Lode, Limestone Range, W. of Double-Barrel Cr. (*ante*). *Ref.* G.S.Q. Pub. 77, p. 7 (1891).

5227. —— ——. *Assoc.with* Gold, Copper Pyrites, and Mispickel, in quartz reef. *Loc.* Good Luck United (Lancashire Lass 1 W.) Mine, Far Fanning, 28 miles N.W. of Ravenswood Junction. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 133, p. 7 (1898).

5228. —— ——. *Assoc.with* Gold and Limonite, in quartz reef. *Loc.* Lancashire Lass Claim, Far Fanning (*ante*). *Ref.* G.S.Q. Pub. 133, p. 6 (1898).

5229. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Spotted Calf Claim, Far Fanning (*ante*). *Ref.* G.S.Q. Pub. 133, p. 7 (1898).

5230. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* On beach, E. of Hawking's Point, Magnetic Is., Cleveland Bay, 5½ miles N. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 75, p. 7 (1892).

5231. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* On side of Mt. Cook, between Retreat Cr. and Five-Beach Bay, Magnetic Is. (*ante*). *Ref.* G.S.Q. Pub. 75, p. 6 (1892).

5232. —— ——. *Assoc.with* Gold and Zinc Blende, in quartz reef. *Loc.* Mt. Elliott, 20 miles S.E.byS. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.M.

5233. —— ——. *Assoc.with* Gold, Limonite, and Zinc Blende, in quartz and calcite. *Loc.* Golden Valley Reef, Mt. Success, 15 miles W.N.W. of **Ravenswood** Junction. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 133, p. 10 (1898).

5234. —— ——. *Assoc.with* Gold and Zinc Blende, in quartz. *Loc.* Mt. Success Reef, Mt. Success (*ante*). *Ref.* G.S.Q. Pub. 133, p. 9 (1898), and G.S.M.

5235. —— ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* Nil Desperandum Reef, in New Consols Mine, Donnybrook, 6½ miles S. of Ravenswood Rail. Stn., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

5236. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Erin's Hope Reef, Donnybrook (*ante*). *Ref.* G.S.Q. Pub. 162, p. 10 (1900).

5236A. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* J.R.D. and Premier Reefs, Hillsborough (8-Mile), 3¾ miles N.N.E. of Ravenswood Rail. Stn., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

5237. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz. *Loc.* Wey Reef, Hillsborough (8-Mile) (*ante*). *Ref.* G.S.M.

5238. —— ——. *Assoc.with* Gold. *Loc.* Beaconsfield Mine, Ravenswood Goldfield, 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

5239. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Black Jack Mine, ¼-mile N.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

5240. —— ——. *Assoc.with* Gold, Mispickel, Copper Pyrites, Tenorite, Malachite, and Zinc Blende, in quartz. *Loc.* Buck Reef, ½-mile S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Assay: See* No. 4019. *Ref.* P.R.S.Q., vol. 4, pp. 53, 76 (1887).

5241. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* Crescent G.M. Lease, New Moon Reef, Ravenswood Goldfield (*ante*). *Ref.* W.C.T.

5242. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* General Grant Reef, 30 chains S.S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

5243. —— ——. *Assoc.with* Gold. *Loc.* Saratoga Mine, ¼-mile S.E.byS. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

5244. —— ——. *Assoc.with* Gold, Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Sunset and General Grant Reefs, ½-mile S. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 183, pp. 2-6 (1903).

5245. —— ——. *Assoc.with* Gold, in quartz. *Loc.* London Reef, Elphinstone Cr., 10 chains S.E.byS. of Ravenswood, Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1900).

5246. —— ——. *Assoc.with* Gold, Copper Pyrites, and Zinc Blende, in quartz reef. *Loc.* New England Reef, Elphinstone Cr., ¼-mile N.W. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Mineral Percentages:* Iron Pyrites = 34·3, Copper Pyrites = 4·8, Zinc Blende = 19·1, Alumina = 4·3, Silica = 37·5.

5247. —— ——. *Assoc.with* Gold, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* New England Reef, Elphinstone Cr., ¼-mile N.W. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 134 (1900).

5248. —— ——. *Assoc.with* Gold, Copper Pyrites, Mispickel, and Zinc Blende, in quartz. *Loc.* Shellmalier Reef, Elphinstone Cr., 30 chains N.N.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 8 (1900).

5249. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Union Jack Mine, Elphinstone Cr., ¾-mile N.E.byN. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

5250. Iron Pyrites. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* Australia Felix Mine, 3 miles E.S.E. of Ravenswood Rail. Stn., Sandy Cr., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Assay: See* No .4035. *Ref.* P.R.S.Q., vol. 4, p. 35 (1887).

5251. —— ——. *Assoc.with* Gold, Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Cousin Jack Reef, 2½ miles S.E. of Ravenswood Rail. Stn., Sandy Cr. (*ante*). *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

5252. —— ——. *Assoc.with* Gold and Galena. *Loc.* Fanny Fern Mine, 2½ miles S.E. of Ravenswood Rail. Stn., Sandy Cr. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 35 (1897).

5253. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* John Bull Block, 2¾ miles E.S.E. of Ravenswood Rail. Stn., Sandy Cr. (*ante*). *Ref.* G.S.M.

5254. —— ——. *Assoc.with* Gold, Copper Pyrites, Galena, and Zinc Blende, in quartz and steatite. *Loc.* Politician Mine, 2¾ miles S.E. of Ravenswood Rail. Stn., Sandy Cr. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 48 (1887).

5255. —— ——. *Assoc.with* Gold, Galena, and Cerussite, in quartz. *Loc.* Star of the South Reef, 12 miles S.W.byS. of Ravenswood Rail. Stn., Connolly Cr., Trieste Camp, Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 152, p. 10 (1900).

5256. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Trieste Reef, 10 miles S. of Ravenswood Rail. Stn., Trieste Camp, Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 10 (1900).

5257. —— ——. *Assoc.with* Gold. *Loc.* Mt. Wright, 6 miles (by rail) N. of Ravenswood, Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

5258. —— ——. *Assoc.with* Galena. *Loc.* Big Ben Silver Mine, 1¾ mile N.N.W. of Ravenswood Rail. Stn., One Mine, Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

5259. —— ——. *Assoc.with* Silver, Copper Pyrites, Stibnite, and Zinc Blende. *Loc.* King's Silver Lode, 1 mile N.byW. of Ravenswood Rail. Stn., One Mile (*ante*). *Analysis:* Copper = 16·25 per cent., Antimony = 26·30 per cent., Silver = 15·35 per cent., Iron = 8·49 per cent., Zinc = 8·75 per cent., Sulphur = 17·02 per cent., Silica = 7·51 per cent., Silver = 5,014 oz. per ton. *Ref.* G.S.Q. Pub. 152, p. 11 (1900).

5260. —— ——. *Assoc.with* Gold, in quartz. *Loc.* General Grant Reef, Mt. Davenport, 4 miles N.W. of Cape R. Rail. Stn., Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 2 (1891), and G.S.M.

5261. —— ——. *Assoc.with* Gold and Hematite, in quartz. *Loc.* Union Reef, between Mt. Davenport and Davenport Cr., 4 miles N.W. of Cape R. Rail. Stn., Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 2 (1891), and G.S.M.

5262. —— ——. *Assoc.with* Gold, Copper Pyrites, and Galena, in quartz. *Loc.* Bell-Gay Reef, Mt. Remarkable, 6 miles W.byN. of Pentland Rail. Stn., 72 miles (by rail and road) S.W.byW. of Charters Towers, Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 5 (1891).

5263. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Governor Blackall and Victoria Reefs, Mt. Remarkable (*ante*). *Ref.* G.S.Q. Pub. 73, p. 4 (1891).

5264. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Hughes's Leader, Pentland, 66 miles (by rail) S.W.byW. of Charters Towers, Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

5265. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Mystery Reef, Pentland (*ante*). *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

5266. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Sarah Howson Reef, Pentland (*ante*). *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

5267. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Golden Hill Reef, The Springs, 2 miles W.S.W. of Pentland Rail. Stn., Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 4 (1891).

5268. —— ——. *Assoc.with* Gold, Ironstone, and Galena, in quartz. *Loc.* Harp of Erin Reef, Upper Cape, 17 miles W.byN. of Cape R. Rail. Stn., Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

5269. —— ——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* Wheel of Fortune Mine, Upper Cape (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

5270. —— ——. *Assoc.with* Gold and Manganese-dioxide, in quartz. *Loc.* Lissner Reef, 7 miles W.N.W. of Lamond Rail. Stn., 41 miles (by rail and road) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 13 (1891).

5271. —— ——. *Assoc.with* Gold, Copper Pyrites, and Galena, in quartz. *Loc.* Agnes Howson Reef, New Homestead Diggings, 46 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith (*ante*). *Ref.* G.S.Q. Pub. 73, p. 12 (1891).

5272. —— ——. *Assoc.with* Gold. *Loc.* Higham Reef, Old Homestead Diggings (*ante*). *Ref.* G.S.M.

5273. —— ——. *Assoc.with* Gold, Silver, Redruthite, Copper carbonate, and Galena, in quartz. *Loc.* Main's Reef, Old Homestead Diggings (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 73, p. 11 (1891), and G.S.M.

5274. —— ——. *Assoc.with* Copper Pyrites and Hematite, in quartz. Lamington Mine, head of Lah-di-dah Cr., trib. of Kelsey Cr., Happy Valley, 40 miles (by road) S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* O.R.

5275. —— ——. *Assoc.with* Gold, Copper Pyrites, Copper carbonate, and Yellow Ochre, in quartz. *Loc.* Seymour's Reef, Marengo Goldfield, 24 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

5276 —— ——. *Assoc.with* Gold, Silver, Copper Pyrites, Malachite, and Azurite, in quartz. *Loc.* Venture Reef, Marengo Goldfield (*ante*). *Assay: See* No. 7490. *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

5276A. —— ——. *Assoc.with* Gold, Copper Pyrites, and Limonite, in quartz. *Loc.* Lady Augusta P.A. (129), Moss Vale Stn., nr. Euri Cr., about 7 miles S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* A.R., p. 269 (1910).

5277. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Currency Reef, Dreghorn Diggings, Burdekin R., 15 miles S. of Ravenswood Rail. Stn., 93 miles (by rail and road) S. of Townsville. *Co.* Murray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

5278. —— ——. *Assoc.with.* Gold and Hematite, in quartz. *Loc.* Ellen Boss Reef, Dreghorn Diggings (*ante*). *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

5279. —— ——. *Assoc.with* Copper Pyrites and Zinc Blende, in leader. *Loc.* Comstock Lease (187), Kangaroo Hills Mineral Field, 40 miles S.W. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* (and *Assays*) G.S.Q. Pub. 82, p. 8 (1892).

5280. —— ——. *Assoc.with* Cassiterite, Hematite, Limonite, Malachite, and Azurite, in quartz and chlorite. *Loc.* Mineral Lease, in Gully, off Douglas Cr., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

5281. —— ——. *Assoc.with* Ironstone, Copper Pyrites, Bornite, Cuprite, Tenorite, Copper carbonate, Galena, and Zinc Blende, in lode. *Loc.* Mt. Theckla Copper Mine, 4 miles N. of Ewan, Kangaroo Hills Mineral Field (*ante*). *Assays: See* No. 2972. *Ref.* G.S.Q. Pub. 167, p. 7 (1901).

5282. —— ——. *Assoc.with* Gold and Silver, in quartz reef. *Loc.* Bowden's Lease (147), Star R. (Argentine) Silver Field, 56 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.M.

5283. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Gt. Kennedy Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.M.

5284. —— ——. *Assoc.with* Galena, Zinc Blende, and Stibnite, in lode. *Loc.* Murphy and Godson's M.L. (73), Star R. (Argentine) Mineral Field (*ante*). *Assay: See* No. 2987. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

5285. —— ——. *Assoc.with* Galena and Zinc Blende, in quartz lode. *Loc.* Northbrook (A. Beazley's) Lease (179), Star R. (Argentine) Silver Field (*ante*). *Assay: See* No. 2990. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

5286. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Struck Oil Reef, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.M.

5287. —— ——. *Assoc.with* Gold, Galena, Minium, Anglesite, Cerussite, Siderite, and Zinc Blende, in quartz lode. *Loc.* Union Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886), G.S.M.

5288. —— ——. *Assoc.with* Mispickel and Galena, in vein. *Loc.* Venture Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

5289. —— ——. *Assoc.with* Ironstone, Limonite, Turgite, Copper Pyrites, and Galena, in quartz reef. *Loc.* Broken R. Gold and Silver Claims, Bee Cr. Diggings, Broken R., **Eungella Goldfield,** 10 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Assay:* Gold = 1 oz., and Silver = 60 to 70 per ton. *Ref.* G.S.Q. Pub. 54, pp. 2, 3 (1889).

5289A. —— ——. *Assoc.with* Gold and Wulfenite, in quartz. *Loc.* Buttercup Reef, Bee Cr., Eungella Goldfield (*ante*). *Ref.* G.S.Q. Pub. 229, p. 28 (1910).

5290. Iron Pyrites. *Assoc.with* Gold, Siderite, Galena, and Zinc Blende, in quartz reef. *Loc.* Coral Tree P.C., Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), and 229, p. 29 (1910).

5291. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Golden Crown Mine, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

5292. —— ——. *Assoc.with* Gold, Copper Pyrites, Malachite, Limonite, Siderite, Galena, and Zinc Blende, in quartz. *Loc.* Highland Mary P.C., Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), and 229, p. 30 (1910).

5292A. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Landslip Reef, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 229, p. 30 (1910).

5293. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Phœnix Mine, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

5294. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Queen Reef, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

5295. —— ——. In quartz. *Loc.* Silver Lease No. 2, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

5296. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Lady Norman Reef, Broken R., 10 miles S. of Bee Cr. Diggings, 70 miles W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

5297. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz reef. *Loc.* 1 mile E. of Eungella Stn., Broken R., 30 miles W. of Miriam Vale Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 39, p. 6 (1887).

5298. —— ——. *Assoc.with* Malachite, Azurite, and Galena, in quartz reef. *Loc.* Duffey's Claim, Blue Mts., 9 miles S.byE. of Eton Rail. Stn., 32 miles (by rail and road) S.byW. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), 229, pp. 18, 19 (1910).

5299. —— ——. *Assoc.with* Felspar and Quartz. *Loc.* Cherry Tree Cr., 24 miles S.E. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 53, p. 4 (1889).

5300. —— ——. *Assoc.with* Copper Pyrites, Mispickel, Galena, Cerussite, Malachite, Azurite, and Zinc Blende, in quartz lode. *Loc.* Mt. Barker Silver Mine, 3 miles N.W. of Eungella Stn., 33 miles W. of Miriam Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 3 (1889), 181, pp. 12-17 (1903), and 229, pp. 34, 35 (1911).

5301. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz. *Loc.* Enterprise Reef, **Normanby Goldfield,** 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 5, p. 8 (1899).

5302. —— ——. *Assoc.with* Gold and Copper carbonate, in quartz. *Loc.* Eureka Reef, Normanby Goldfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pubs. 5, p. 10 (1879), and 88, p. 4 (1893).

5303. —— ——. *Assoc.with* Gold and Copper carbonate, in quartz. *Loc.* Faith (Just-in-Time) Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 8 (1879).

5304. —— ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* Glengarry Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 5, p. 6 (1879), and 88, p. 3 (1893).

5305. —— ——. *Assoc.with* Gold, Copper Pyrites, Tetrahedrite, Siderite, Mispickel, Ironstone, and Yellow Ochre, in quartz. *Loc.* Grace Darling Lease (11), Normanby Goldfield (*ante*). *Assay:* Gold = 16 oz. 6 dwt. 16 gr. per ton. *Ref.* G.S.Q. Pubs. 5, p. 6 (1879), 88, p. 3 (1893).

5306. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Lady O'Reilly Mine, Normanby Goldfield (*ante*). *Assay: See* No. 4128A. *Ref.* A.R., p. 153 (1908).

5307. —— —— (decomposed). *Assoc.with* Gold, in quartz reef. *Loc.* Mt. Flat-top Reefs, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 9 (1879).

5308. —— ——. *Assoc.with* Gold and Silver in quartz. *Loc.* Perseverance Mine, Normanby Goldfield (*ante*). *Ref.* A.R., p. 161 (1908).

5309. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz. *Loc.* Star of Hope Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 4 (1879), and G.S.M.

5310. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Venture Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 8 (1879).

5311. —— ——. *Assoc.with* Gold, Marcasite, Mispickel, and Copper Pyrites, in quartz, in vein of steatite. *Loc.* Victor Tunnel, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 88, p. 5 (1893), and G.S.M.

5312. —— ——. *Assoc.with* Gold, Mispickel, Copper Pyrites, and Copper carobnate, in quartz. Welcome Reef, Normanby Goldfield (*ante*). *Assay: See* No. 4137. *Ref.* G.S.Q. Pubs. 5, p. 5 (1879), and 88, p. 2 (1893).

5313. —— ——. In quartz. Andromache R., Normanby Goldfield (*ante*). *Ref.* A.R., p. 72 (1906).

5314. —— ——. *Assoc.with* Tourmaline, in porphyry. *Loc.* Normanby Range, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 1 (1879).

5315. —— ——. *Assoc.with* Gold, Ironstone, Malachite, and Chlorite, in quartz reef. *Loc.* Head of Spring Cr., Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 7 (1879).

5316. —— ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Otto's Claim, McMaster's (Top Camp), 14 miles N.W.byW. of Clermont Rail. Stn., Clermont Goldfield. *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 201, p. 64 (1906).

5317. —— ——. *Assoc.with* Galena, Cerussite, and Zinc Blende, in lode. *Loc.* Bonnie Dundee Mine, **Sellheim Mineral Field,** 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* (and *Assays*) G.S.Q. Pub. 57, p. 6 (1889).

5318. —— ——. *Assoc.with* Copper Pyrites, Galena, Minium, Cerussite, Zinc Blende, and Clay, in lode. *Loc.* General Gordon Mine, Sellheim Mineral Field (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 57, p. 6 (1889).

5319. —— ——. *Assoc.with* Ironstone, Galena, Anglesite, Minium, Cerussite, and Zinc Blende. *Loc.* Pyramid Silver Lode, Sellheim Mineral Field (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 57, p. 3 (1889).

5320. —— ——. *Assoc.with* Silver, Ironstone, Galena, Minium, Cerussite, and Zinc Blende, in lode. *Loc.* Rob Roy Mine, Sellheim Mineral Field (*ante*). *Assay: See* No. 3017. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

5321. —— ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Smith's Claim, Hillside, Black Ridge, 12¾ miles N.N.W. of Clermont, Clermont Goldfield. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 201, p. 48 (1906).

5322. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Crown Reef, Copperfield, 5 miles S.S.W. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 6 (1886).

5323. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Palm-tree Reef, Copperfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 6 (1886).

5324. —— ——. *Assoc.with* Copper Pyrites, in quartzite, in serpentine and slate. *Loc.* Peak Downs Copper Mine, Copperfield (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 150, pp. 2-4 (1900).

5325. —— ——. *Assoc.with* Gold and Mispickel, in quartz and chlorite. *Loc.* Star of Hope Reef, near Peak Downs Copper Mine, Copperfield (*ante*). *Ref.* G.S.Q. Pub. 27, p. 5 (1886).

5326. —— ——. *Assoc.with* Gold, Siderite, Magnesite, and Dolomite, in quartz. *Loc.* Biddy Walsh Reef, McDonald Flat, Clermont Road, 3 miles S.S.E. of Clermont. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 176, p. 18 (1902).

5327. —— ——. *Assoc.with* Gold and Hornblende, in quartz. *Loc.* Camboon Mine, Camboon, Upper Dawson R., 85 miles N.W.byW. of Mt. Perry, 114 miles S. of Rockhampton. *Co.* Dawson; *Dist.* Leichhardt. *Ref.* G.S.M.

5327A. —— ——. *Assoc.with* Copper Pyrites and Tenorite, in granite. *Loc.* Flora Copper Lode, MacFadzen's M.L. (1749), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pubs. 181, p. 11 (1903), and 228, p. 34 (1910).

5327B. —— ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, and Ironstone, in slate. *Loc.* Isen's M.F. (2642), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 27-29 (1910).

5327C. —— ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, and Hematite, in granite. *Loc.* Iron Duke M.C. 42 and Painted Peak M.F. (1807), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 27, 39 (1910).

5327D. —— ——. *Assoc.with* Copper Pyrites, Azurite, and Malachite, in gossan in slate. *Loc.* Keeley's M.F. (2382), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 29, 30 (1910).

5327E. —— ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, and Hematite, in gossan in slate. *Loc.* Laird of the Hills M.L. (32), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 30, 31 (1910).

5327F. —— ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, Azurite, Chlorite, and Calcite, in slate and granite. *Loc.* MacFadzen's M.F. (1749), Douchang, Flora, Essie, Dozzler, and Green Outcrops Lodes, Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 31-35 (1910).

5327G. Iron Pyrites. *Assoc.with* Hematite, Limonite, Redruthite, Malachite, and Azurite, in granite. *Loc.* Monarch P.P.A. (116, etc.), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 36-38 (1910).

5327H.—— ——. *Assoc.with* Pyrrhotite, Hematite, Limonite, Magnetite, Copper Pyrites, Malachite, and Azurite, in granite and slate. *Loc.* Rodger's Back Sel., M.F. 1430, Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 41, 42 (1910).

5328. —— ——. *Assoc.with* Gold, Siderite, Calcite, Steatite, and Felspar, in quartz. *Loc.* Gt. Catherine Reef, Yatton Goldfield, 21 miles S.W.byW. of St. Laurence. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

5329. —— ——. *Assoc.with* Gold, in quartz and calcite. *Loc.* Keeley and Valentine's Mine, Nuggety Gully, Mt. Britton Goldfield, 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* (and *Assays*) G.S.Q. Pub. 39, p. 4 (1887).

5329A.—— ——. *Assoc.with* Gold, Silver, and Copper Pyrites, in quartz. *Loc.* Tally Ho Claim, Mt. Spencer Run, about 8 miles S.S.W. of Eton Rail. Stn. (Mackay line). *Co.* Wodehouse (*ante*). *Ref.* A.R., p. 284 (1910), and p. 317 (1911).

5329B.—— ——. *Assoc.with* Gold, Silver, Mispickel, Galena, and Zinc Blende, in lode. *Loc.* Monsildare Silver-Lead Lode, Por. 46, Par. of Monsildale, 35 miles N. of Esk, 102 miles (by rail and road) N.N.W. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Ref.* (and *Assays*) G.S.Q. Pub. 169, pp. 1-4 (1901).

5330. —— ——. *Assoc.with* Galena, Massicot, Bismite, Mispickel, and Chlorite, in quartzite. *Loc.* Blackbutt, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* O.R.

5331. —— ——. *Assoc.with* Galena, in quartz reef. *Loc.* Sandy Mt., Crow's Nest Rail. Stn., 34 miles (by rail) N.N.E. of Toowoomba. *Co.* Cavendish (*ante*). *Ref.* A.R., p. 148 (1908).

5332. —— ——. *Assoc.with* Mispickel, Scorodite, Wolfram, Cerussite, and Massicot, *Loc.* Plant's Leasehold, 4 miles E. of Crow's Nest Rail. Stn., 38 miles (by rail and road) N.N.E. of Toowoomba. *Co.* Cavendish (*ante*). *Ref.* A.R., pp. 148, 149 (1908).

5333. —— ——. *Assoc.with* Copper Pyrites, Tenorite, Galena, and Zinc Blende, in altered sedimentary rocks. *Loc.* Gt. Pyramid Copper and Silver Mine, 10 miles N. of Esk Rail. Stn. (Brisbane-Valley Br. line), 77 miles (by rail and road) N.byW. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 169, p. 6 (1901).

5334. —— ——. *Assoc.with* Galena and Zinc Blende, in lode. *Loc.* Kipper Cr., 8 miles W. of Esk Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Ref.* A.R., p. 245 (1910).

5335. —— ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende, in sedimentary rocks. *Loc.* Rising Star Copper Mine, on Cressbrook Cr., 12 miles N. of Esk Rail. line (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 169, p. 4 (1901).

5336. —— ——. *Assoc.with* Gold, Copper Pyrites, Massicot, Anglesite, Galena, Mispickel, and Limonite, in gossan and slate. *Loc.* Silver Knob P.A., Mt. Langan, Emu Cr., 14½ miles W.N.W. of Kannungar Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Assay: See* No. 3033. *Ref.* Q.G.M.J., vol. 7, pp. 46, 47 (1906).

5337. —— ——. *Assoc.with* Gold, Massicot, Cerussite, Cassiterite, Bismuth, and Calcite, in kaolinised greisen. *Loc.* Snowdrop P.A., Mt. Langan, Emu Cr. (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 467 (1906).

5338. —— ——. As octahedral and cubical crystals, in a metamorphosed sedimentary rock. *Loc.* Yarraman Cr., Seven-mile Diggings, 7 miles S.E. of Nanango, 123 miles N.W.byN. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 525 (1906).

5339. —— ——. *Assoc.with* Gold, Mispickel, and Tourmaline, in quartz reefs. *Loc.* Seven-mile Diggings (*ante*). *Ref.* G.S.Q. Pub. 29, p. 2 (1886), and Q.G.M.J., vol. 7, p. 525 (1906).

5340. —— ——. In diorite. Taromeo Cr., Taromeo, 20 miles N.N.W. of Kannangur Rail. Stn. (Brisbane-Valley line), 103 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* L.C.B.

5341. —— ——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* Pors. 236, 241A, and 289, Gold Cr., Brookfield, 10 miles W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 108, p. 25 (1896).

5342. —— ——. *Assoc.with* Gold and Galena, in quartz and jasper. *Loc.* Sel. 194 (northern part), Brookfield Cr., nr. Gold Cr. Reservoir, Brookfield, 10 miles W.S.W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 63, p. 2 (1890).

5343. —— ——. *Assoc.with* Zinc Blende, in quartz reef. *Loc.* McPhee's Sel., Mountain Camp, Enoggera Range, 6½ miles W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* O.R.

5344. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz. *Loc.* Perseverance Reef, Mountain Camp, Enoggera Range (*ante*). *Ref.* G.S.Q. Pub. 143, p. 9 (1889).

5345. —— ——. *Assoc.with* Copper Pyrites, Azurite, and Malachite. *Loc.* Por. 140, Par. of Dixon, 13 miles E. of Esk Rail. Stn., 70 miles (by rail and road) N.W.byN. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* A.R., pp. 156, 157 (1908).

5346. —— ——. *Assoc.with* Gold and Silver, in quartz and slate. *Loc.* Samson Cr., Samford, 8 miles W.N.W. of Enoggera Rail. Stn., 14 miles (by rail and road) N.W.byW. of Brisbane. *Co.* Stanley (*ante*). *Ref.* O.R.

5347. —— ——. In quartzite. *Loc.* Samsonvale, 18 miles N.W.byN. of Enoggera Rail. Stn., 24 miles (by rail and road) N.W.byN. of Brisbane. *Co.* Stanley (*ante*). *Ref.* A.R., p. 104 (1907).

5348. —— ——. *Assoc.with* Turgite. *Loc.* School Reserve, Upper Kholo, 3 miles N. of Ipswich. *Co.* Stanley (*ante*).

5349. —— ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* Beaton's Sel. (68), 6 miles S.E. of Beenleigh, 30 miles (by rail) S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 51, p. 6 (1889).

5350. —— ——. In quartz. Davenport's Sel. (69), 6 miles S.E. of Beenleigh Rail. Stn., 30 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 36, p. 1 (1887).

5350A. —— ——. *Assoc.with* Gold, in quartzite reef. *Loc.* Por. 239, Witty's Freehold, 1 mile W. of Ormeau, 32 miles (by rail and road) S.W. of Brisbane (South Coast line). *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 235, p. 38 (1911).

5351. —— ——. *Assoc.with* Gold and Silver, in quartz. *Loc.* Bethania Junction (South Coast line), 21 miles (by rail) S.S.E. of Brisbane. *Co.* Ward (*ante*). *Assay: See* No. 4216. *Ref.* A.R., p. 51 (1906).

5351A. —— ——. *Assoc.with* Zinc Blende, in lode. *Loc.* Geike's Sel., Upper Coomera, 38 miles (by rail) S.E. of Brisbane (South Coast line). *Co.* Ward (*ante*). *Ref.* G.S.M.

5352. —— ——. *Assoc.with* Gold and Silver, in quartz reef. *Loc.* Tunnel, nr. Southport, 50 miles (by rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* A.R., p. 150 (1908).

5352A. —— ——. *Assoc.with* Pyrrhotite, in graphitic schist and quartz. *Loc.* Tambourine Mt., 10 miles S.S.E. of Logan Village Rail. Stn. (Beaudesert Br. line). *Co* Ward (*ante*). *Ref.* O.R. (1910).

5352B. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Banner Reef, Barmundoo (Tableland) Goldfield, 28 to 40 miles S.W.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* A.R., p. 214 (1910).

5353. —— ——. *Assoc.with* Gold and Felspar, in quartz reef. *Loc.* Bunker's Mine, Barmundoo (Tableland) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

5354. —— ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Friend's Claim, Barmundoo (Tableland) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

5355. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende. *Loc.* Georgina Mine, Barmundoo Goldfield (*ante*). *Ref.* G.S.M.

5356. —— ——. *Assoc.with* Gold, Galena, Mispickel, and Zinc Blende, in quartz. *Loc.* Griffith's Reef, Diggers' Cr., Barmundoo Goldfield (*ante*). *Yield: See* 4235. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

5357. —— ——. *Assoc.with* Gold. *Loc.* Mountain Rise Mine, Barmundoo Goldfield (*ante*). *Ref.* G.S.M.

5358. —— ——. *Assoc.with* Gold, Mispickel, and Zinc Blende, in quartz reef. *Loc.* Good Hope Mine, Crow's Cr., Barmundoo Run, 35 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Assays: See* No. 4242. *Ref.* G.S.Q. Pub. 58, p. 5 (1890).

5359. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Mt. Jacob Mine (Garden and Mt. Fairbrother Reefs), Bompa Goldfield, 44½ miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 58, p. 7 (1890).

5360. Iron Pyrites. *Assoc.with* Gold, Copper Pyrites, Galena, and Zinc Blende, in quartz and calcite. *Loc.* Mt. Jacob Mine (Stand-by Reef), Bompa Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

5361. —— ——. *Assoc.with* Gold, Copper Pyrites, Mispickel, and Zinc Blende, in quartz. *Loc.* Roger's Mine, Bompa Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 7 (1890).

5362. —— ——. *Assoc.with* Gold, in chloritic quartz. *Loc.* Connemarra Reef, Calliope Goldfield, 12 miles S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 58, p. 8 (1890).

5363. —— ——. *Assoc.with* Gold, in chloritic quartz. *Loc.* John Bull Reef, Calliope Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 8 (1890).

5364. —— ——. *Assoc.with* Copper Pyrites, Native Copper, Cuprite, Tile Ore, Malachite, Azurite, Magnetite, Hematite, Limonite, and Calcite. *Loc.* Many Peaks Copper Mine, Deception Cr., about 54 miles (by rail) S. of Gladstone (Boyne Valley line). *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 150, p. 8 (1900), and 194, p. 28 (1904).

5364A. —— ——. *Assoc.with* Gold, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, and Ironstone, in crystalline limestone, etc. *Loc.* Mt. Hector Copper Mine, E. side of Dawes Range, 60 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* Q.G.M.J., vol. 4, pp 174-177 (1903).

5365. —— ——. *Assoc.with* Gold, Copper Pyrites, Mispickel, Galena, Zinc Blende, and Calcite, in quartz. *Loc.* Advance Reef, **Norton Goldfield,** 33 miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 21, p. 6 (1885), 208, p. 11 (1907), and G.S.M.

5366. —— ——. *Assoc.with* Gold, Silver, Zinc Blende, and Galena, in quartz and calcite. *Loc.* All Nations Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 13 (1907).

5367. —— ——. *Assoc.with* Gold, Copper Pyrites, Mispickel, and Scorodite, in quartz. *Loc.* Bald Hills Reef, Norton Goldfield (*ante*). *Assays: See* No. 4266 *Ref.* (and *Assays*) G.S.Q. Pub. 208, p. 14 (1907).

5368. —— ——. *Assoc.with* Gold, Silver, Galena, Malachite, and Zinc Blende, in quartz. *Loc.* Brigham Young (Todman's Tapautohaungo), Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, pp. 15, 16 (1907).

5369. —— ——. *Assoc.with* Gold, Silver, Mispickel, Copper Pyrites, Redruthite, Azurite, Malachite, Zinc Blende, and Scorodite, in quartz. *Loc.* Chandler's Reef, Norton Goldfield (*ante*). *Assay: See* No. 4269. *Ref.* G.S.Q. Pub. 208, p. 18 (1907).

5370. —— ——. *Assoc.with* Gold, Silver, Galena, Mispickel, and Zinc Blende, in quartz. *Loc.* Conran's Reef, Norton Goldfield (*ante*). *Assay:* Gold = 7 oz., and Silver 8 oz. 16 dwt. per ton. *Ref.* G.S.Q. Pub. 58, p. 8 (1890), and G.S.M.

5371. —— ——. *Assoc.with* Bornite. *Loc.* Frampton Lease, Norton Goldfield (*ante*).

5372. —— ——. *Assoc.with* Gold, Galena, Zinc Blende, in quartz and calcite. *Loc.* Frampton United Mine, Norton Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

5373. —— ——. *Assoc.with* Gold, Galena, Mispickel, and Zinc Blende, in quartz and calcite. *Loc.* Frampton Reef, Norton Goldfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 208, p. 21 (1907).

5374. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Friend's Mine, Norton Goldfield (*ante*). *Ref.* G.S.M.

5375. —— ——. *Assoc.with* Gold, Silver, Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Galena Reef, Norton Goldfield (*ante*). *Assay: See* No. 3048. *Ref.* G.S.Q. Pub. 208, pp. 22-24 (1907).

5376. —— ——. *Assoc.with* Gold, Silver, Mispickel, Galena, Zinc Blende, and Redruthite, in quartz. *Loc.* Goody's (Carmichael Reef), Norton Goldfield (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 208, p. 26 (1907).

5377. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Han's Big Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 27 (1907).

5378. —— ——. *Assoc.with* Gold, Galena, Zinc Blende, and Calcite, in quartz. *Loc.* Hickey's Reef, Norton Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

5379. —— ——. *Assoc.with* Gold, Silver, Copper Pyrites, Mispickel, and Zinc Blende, in quartz. *Loc.* Little Wonder Reef, Norton Goldfield (*ante*). *Assay: See* No. 4280. *Ref.* G.S.Q. Pub. 208, p. 29 (1907).

5380. —— ——. *Assoc.with* Copper Pyrites. *Loc.* Long Tunnel, Norton Goldfield (*ante*). *Ref.* L.C.B.

5381. —— ——. *Assoc.with* Gold, Silver, and Zinc Blende, in quartz and calcite. *Loc.* Marodian Reef, Norton Goldfield (*ante*). *Assay:* Gold = 1 oz. 6 dwt. 4 gr. per ton; Silver = 1 oz. 8 dwt. 19 gr. per ton. *Ref.* G.S.Q. Pub. 208, p. 32 (1907).

5382. —— ——. *Assoc.with* Gold, etc., in quartz. *Loc.* Mundic Lode, Norton Goldfield (*ante*). *Ref.* G.S.M.

5383. —— ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* Never Never Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 7 (1885).

5384. —— ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* New Constitution Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 33 (1907).

5385. —— ——. *Assoc.with* Gold, Mispickel, Zinc Blende, Limonite, in quartz. *Loc.* Paddock Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 34 (1907).

5386. —— ——. *Assoc.with* Gold and Mispickel, in calcite. *Loc.* Sailor Boy Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 35 (1907).

5387. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Smart's Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 36 (1907).

5388. —— ——. *Assoc.with* Gold, Copper Pyrites, Mispickel, and Zinc Blende, in quartz. *Loc.* Sulphide Reef, Norton Goldfield (*ante*). *Assay: See* No. 4292. *Ref.* G.S.Q. Pub. 208, p. 38 (1907).

5389. —— ——. *Assoc.with* Gold, Silver, Mispickel, Zinc Blende, and Galena, in quartz and calcite. *Loc.* Who-Ha'-Thouht-It Reef, Norton Goldfield (*ante*). *Assay: See* No. 4294. *Ref.* G.S.Q. Pub. 21, p. 6 (1885), 208, p. 39 (1907).

5390. —— ——. *Assoc.with* Gold and Mispickel, in quartz reefs. *Loc.* Granite Ridges, Wattle and Cattle Crs., Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 7 (1885).

5391. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Capricornian Mine, Ulam Goldfield, 3 miles S. of Toonda Rail. Stn. (North Coast line), 44 miles (by rail and road) W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 99, p. 6 (1894).

5392 —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Central Queensland 1 N. Mine, Busby's Gully, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 9 (1894).

5393. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Just-in-Time Mine, Ulam Goldfield (*ante*). *Assay:* Gold = 1 oz. 9 dwt. 9 gr. per ton. *Ref.* G.S.Q. Pub. 99, p. 11 (1894).

5394. —— ——. *Assoc.with* Galena and Copper carbonate, in quartz reef. *Loc.* Lamona Mine, Busby's Gully, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 9 (1894).

5395. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Last Chance, Mystery, and Nil Desperandum Mines, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, pp. 5-8 (1894).

5396. —— ——. *Assoc.with* Gold and Limonite, in quartz reef. *Loc.* New Silkworth Mine, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 11 (1894).

5397. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Seaview, Queenslander, and Victory Mines, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, pp. 6-10 (1894).

5398. —— ——. *Assoc.with* Gold and Ironstone, in quartz reef. *Loc.* St. Joseph United and True Blue Mines, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, pp. 3, 10 (1894).

5398A. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Halliday's, King's No. 8, and May's Reef, in Britannia Mine, Canoona Goldfield, 35 miles N.byW. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Ref.* O.R. (1910).

5398B. —— ——. *Assoc.with* Gold, in quartz. *Loc.* King's Reefs (1, 2), in Young Britannia Gold Mine, Canoona Goldfield (*ante*). *Ref.* A.R., p. 269 (1910).

5399. —— ——. *Assoc.with* Gold, in serpentine. *Loc.* Endeavour Mine, Cawarral, 23 miles (by rail) N.N.E. of Rockhampton (Yeppoon line), Cawarral Goldfield. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.M.

5400. —— ——. *Assoc.with* Gold, in quartz and chlorite. *Loc.* Helena Reef, Cawarral (*ante*). *Ref.* Q.M.

5401. —— ——. *Assoc.with* Gold, Silver, Copper Pyrites, with traces of earthy Hematite, Galena, Azurite, Malachite, Witherite, Barytes, and Red Jasper, in massive lodes of quartzite, ironstone, and shale. *Loc.* Gt. Fitzroy Copper and Gold Mine, Mt. Chalmers, 19 miles (by rail) N.E. of Rockhampton, Cawarral Goldfield. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* (and *Assays*) G.S.Q. Pub. 216 (1907).

5402. Iron Pyrites. *Assoc.with* Gold, in quartz. *Loc.* North Star Mine, New Zealand Gully, 15 miles (by rail) N.E. of Rockhampton, Cawarral Goldfield (*ante*). *Ref.* G.S.M.

5403. —— ——. *Assoc.with* Gold, Calcite, and Tourmaline. *Loc.* Union Gold Mine, Cawarral, 23 miles (by rail) N.N.E. of Rockhampton, Cawarral Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 67 (1887).

5404. —— ——. *Assoc.with* Silver, Cuprite, Tenorite, Malachite, Cerussite, Zinc Blende, and Barytes, in serpentinous shales, etc. Mt. Warminster Copper-Lead Mine, nr. Mt. Chalmers, 20 miles (by rail) N.E. of Rockhampton, Cawarral Goldfield (*ante*). *Ref.* B.D.

5405. —— ——. *Assoc.with* Gold, Copper Pyrites, and Pyrrhotite, in quartz reef. *Loc.* Hector Mine, on Crocodile Cr. Rd., 6 miles S. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 125, p. 27 (1897), and G.S.M.

5406. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Mt. Usher Mine, Gavial Cr., 6 miles N.E. of Mt. Morgan Rail. Stn., 30 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 132, p. 15 (1898), and G.S.M.

5406A. —— ——. *Assoc.with* Gold, Telluride of Gold and Silver, and Zinc Blende, in calcite and quartz. *Loc.* Anglo-Saxon Mine, Mt. Usher, Gavial Cr. (*ante*). *Ref.* O.R.

5407. —— ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende, in quartz reef. *Loc.* Mary Florence Mine, Blackfellow's Gully, Morinish Goldfield, 25 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* A.R.D.M., p. 60 (1885), and G.S.M.

5407A. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Welcome Mine, Morinish Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 7 (1887).

5407B. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Nil Desperandum Mine, Ridgelands Goldfield, 20 miles N.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.M.

5408. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Native Cat Extd., Stanwell Goldfield, 16 miles (by rail) S.W.byW. of Rockhampton. *Co.* Livingstone (*ante*).

5409. —— ——. *Assoc.with* Mispickel. *Loc.* Mt. Gordon, 3 miles W. of Wycarbah Rail. Stn. (Central line), 27 miles (by rail and road) S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

5410. —— ——. *Assoc.with* Galena, in quartz reef. *Loc.* The Pointer's, nr. Yaamba, 13 miles N.W.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.M.

5411. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Langdale Hill, nr. Tooloombah Stn., 25 miles S. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 84, p. 9 (1892).

5412. —— ——. *Assoc.with* Gold, in quartz and chlorite. *Loc.* Caledonian Reef, Rosewood Goldfield, 32 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 49, p. 7 (1889).

5413. —— ——. *Assoc.with* Copper Pyrites, Cuprite, and Azurite. Stevens's Copper Lode, 2½ miles W. of Cania Township, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 58 (1890).

5414. —— ——. *Assoc.with* Copper Pyrites, Copper carbonate, Magnetite, and Manganese-dioxide. *Loc.* Callide or 5-Mile Copper Mine, Kroombit, 50 miles S.S.W. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 27 (1904), and G.S.M.

5414A. —— ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Hematite, Magnetite, and Limonite, in gossan lodes. *Loc.* M.L. (262), Kroombit Copper Mines, 4¼ miles E.S.E. of Kroombit Hd. Stn., 56 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 98 (1906).

5415. —— ——. *Assoc.with* Gold, Silver, Native Copper, Copper Pyrites, Redruthite, Cuprite, Azurite, Malachite, Ironstone, Molybdenite, and Galena, in granitic rock, breccia, and sandtsone. *Loc.* Moonmera Copper Mines, nr. Moonmera Rail. Stn. (**Mt. Morgan** line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 195, p. 22 (1904).

5416. —— ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Clanricarde Mine, 4 miles S.S.W. of Mt. Morgan Rail. Stn., 28 miles (by rail and road) S.S.W. of Rockhampton, Mt. Morgan (Crocodile Cr.) Goldfield. *Co.* Raglan (*ante*). *Assays:* Average Gold = 5 oz. 11 dwt. 18 gr. per ton. *Ref.* G.S.Q. Pub. 103, p. 30 (1895).

5417. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz reef. *Loc.* Champion Lease, head of Champion Gully, 1 mile N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 12 (1898).

5418. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Peut's Reef, S. of Champion Gully, 1 mile N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 12 (1898).

5419. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz reef. *Loc.* Welcome Mine, Champion Gully, 1¼ mile N.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 13 (1898).

5420. —— ——. *Assoc.with* Gold, in quartzite. *Loc.* Gt. North Lode, 3½ miles N.N.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 103, p. 29 (1895).

5421. —— ——. *Assoc.with* Gold, Limonite, and Calcite, in quartzite lode. *Loc.* Hidden Treasure Mine, S. of Mundic Cr., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 132, p. 11 (1898), 161, pp. 9-12 (1901).

5422. —— ——. *Assoc.with* Gold, in quartz reef. Hit or Miss Mine, Mt. Morgan (Crocodile) Goldfield (*ante*). *Ref.* G.S.M.

5423. —— ——. *Assoc.with* Gold, in gossan, quartzite, and conglomerate. *Loc.* Light of Day Mine, Mt. Gilmore, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 161, pp. 5-8 (1901).

5424. —— ——. *Assoc.with* Gold, in quartzite lode. *Loc.* Morganite Mine, nr. Mt. Morgan Rail. line, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 161, p. 12 (1901).

5425. —— ——. *Assoc.with* Copper Pyrites, in slate. *Loc.* Mt. Alexander Mine, 8 miles S.S.E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 143, p. 26 (1899).

5426. —— ——. *Assoc.with* Gold, Silver, Copper Pyrites, Magnetite, Hematite, Limonite, Göthite, Pyrolusite, and Satin Spar, in vesicular quartz, quartzite, kaolin, and ironstone. *Loc.* Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton, Mt. Morgan Goldfield (*ante*). *Ref.* (and *Assays*) G.S.Q. Pubs. 17, p. 1 (1884), 47 (1888), 83 (1892), 132 (1898).

5427. —— ——. *Assoc.with* Calaverite, in quartz. *Loc.* Mt. Morgan Gold Mine (at the 32 ft. level) (*ante*). *Ref.* E.S.S.

5428. —— ——. *Assoc.with* Copper Pyrites and Selenite, in veins. *Loc.* Mt. Morgan Gold Mine (*ante*). *Ref.* B.D.

5429. —— ——. *Assoc.with* Gold, Ironstone, and Copper carbonate, in serpentine and quartzite. *Loc.* Mt. Morgan N. Mine, adjoining Mt. Morgan Mine, Mt. Morgan Goldfield (*ante*). *Ref.* G.S Q. Pub. 132, p. 8 (1898).

5430. —— ——. *Assoc.with* Gold, in quartz.. *Loc.* Mundic Reef, Mt. Morgan, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.M.

5431. —— ——. *Assoc.with* Gold, Mispickel, Copper Pyrites, and Zinc Blende, in quartz reef. *Loc.* Queen of the Valley Mine, between Dee R. and Crocodile Cr., 4 miles N.E. of Mt. Morgan Rail. Stn., Mt. Morgan (Crocodile Cr.) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 13 (1898).

5432. —— ——. *Assoc.with* Gold, in quartzite. *Loc.* Rockhampton P. Co.'s Area, 1¼ mile W.N.W. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 10 (1898).

5433. —— ——. *Assoc.with* Gold, Copper Pyrites, and Zinc Blende, in quartz and calcite. *Loc.* Roxburgh Mine, between Dee R. and Gavial Cr., 6 miles N.E.byE. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 14 (1898).

5434. —— ——. *Assoc.with* Gold, in quartz. *Loc.* St. Gothard Mine, 12 miles N.E. of Mt. Morgan Rail. Stn., Mt. Morgan (Crocodile) Goldfield (*ante*). *Ref.* G.S.Q. Pub. 132, p. 16 (1898).

5435. —— ——. *Assoc.with* Gold and Copper Pyrites, in quartz and calcite. *Loc.* Struck Oil Lease (186), 5 miles E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 103, p. 28 (1895), 132, p. 14 (1898).

5436. —— ——. *Assoc.with* Gold, Tourmaline, and Calcite. *Loc.* Union Gold Lease, Mt. Morgan Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 51 (1887).

5437. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Windsor Mine, Mt. Morgan (Crocodile Cr.) Goldfield (*ante*). *Ref.* Q.M.

5438. —— ——. In limestone. Por. 1230, Walla, Gin Gin, 29 miles (by rail) W.byS. of Bundaberg (Bundaberg-Mt. Perry line). *Co.* Bowen; *Dist.* **Wide Bay.** *Ref.* L.C.B.

5439. Iron Pyrites. *Assoc.with* Copper Pyrites, Tetrahedrite, Azurite, Malachite, Galena, Zinc Blende, and Calcite, in slate, diorite, andesite, etc. *Loc.* Blue Bell Copper Mine, Amamoor Cr., 19 miles S.S.E. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* Q.G.M.J., vol. 8, pp. 524-526 (1907).

5440. —— ——. *Assoc.with* Gold and Silver, in quartz. *Loc.* Black Snake Reef, Black Snake Goldfield, 10 miles S. of Kilkivan. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

5441. —— ——. *Assoc.with* Gold, in quartz reef. *Loc.* Queensland Freeholds Co.'s Mine, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 53 (1897).

5442. —— ——. *Assoc.with* Gold, Mispickel, and Copper Pyrites, in quartz reef. *Loc.* Rose, Shamrock, and Thistle Mine, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

5443. —— ——. *Assoc.with* Gold, Silver, Copper Pyrites, Mispickel, Galena, Zinc Blende, and Schorl, in quartz. *Loc.* Victoria Reef, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

5444. —— ——. *Assoc.with* Gold, Silver, and Tenorite, in quartz reef. *Loc.* Stoney Ridge, Black Snake Goldfield (*ante*). *Ref.* G.S.M.

5445. —— ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tenorite, Azurite, Malachite, Hematite, and Limonite, in lodes, in syenitic granite. *Loc.* Calgoa Copper Mines, Thunder Cr., Calgoa Cr., 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 207, pp. 5-11 (1907).

5446. —— ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende. *Loc.* Mellor and Elworthy's Stn., Imbil, 8 miles from Kadanga, 15 miles S. of Gympie. *Co.* Lennox (*ante*). *Ref.* A.R., p. 9 (1907).

5447. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Empress Reef, Yabba (Jimna) Goldfield, 35 miles S. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 169, p. 15 (1901).

5448. —— ——. *Assoc.with* Gold, Copper Pyrites, Redruthite, Cuprite, Malachite, Bismuthinite, Magnetite, and Limonite. *Loc.* Kabonga Mine, Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 125, p. 36 (1897), and G.S.M.

5448A. —— ——. *Assoc.with* Gold, in quartz and gossan. *Loc.* New Year's Extd. Claim, Kilkivan Goldfield (*ante*). *Ref.* A.R., p. 202 (1909).

5449. —— ——. *Assoc.with* Gold, Galena, and Zinc Blende, in quartz and calcite. *Loc.* Rise and Shine Reef, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 2 (1886).

5449A. —— ——. *Assoc.with* Gold and Ironstone, in quartz lode. *Loc.* P.A. (815), 7 miles (by road) W. of Kilkivan. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* A.R., p. 235 (1910).

5450. —— ——. *Assoc.with* Gold, Copper carbonate, Mispickel, Limonite, and Zinc Blende, in quartz, calcite, and gossan veins. *Loc.* Mt. Ruby, ½-mile W.N.W. of Glenbar Head Stn., 20 miles W. of Tiaro Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

5451. —— ——. *Assoc.with* Galena. *Loc.* Chinaman's Cr., Mt. Ubi, W. of Blackall Range, 20 miles W.byS. of Palmwoods Rail. Stn., 85 miles (by rail and road) N. of Brisbane. *Co.* Lennox (should be March) (*ante*). *Ref.* G.S.M.

5452. —— ——. *Assoc.with* Tenorite, Copperas, Galena, Zinc Blende, and Calamine, in quartz reef. *Loc.* Beer and Dawson's Lease, Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 8 (1902).

5453. —— ——. *Assoc.with* Gold, Specular Hematite, Calcite, Graphite, with traces of Copper, in diorite. *Loc.* Campbell's Reef, Yorkey's Goldfield (*ante*). *Refs.* G.S.M. and G.S.Q. Pub. 197, p. 8 (1902).

5454. —— ——. *Assoc.with* Gold, Copper Pyrites, Hematite, and Zinc Blende, in quartz reef. *Loc.* Ortt's Mine, Yorkey's Goldfield (*ante*). *Ref.* G.S.M., and G.S.Q. Pub. 179, p. 8 (1902).

5455. —— ——. *Assoc.with* Gold, Stibnite, and Galena, in quartz reef. *Loc.* Triad Lease, Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 7 (1902).

5456. —— ——. *Assoc.with* Gold, Stibnite, and Cervantite. *Loc.* Yorkey's Surprise G.M. Lease, and Zealandia Lease (Surprise and Zealandia Reefs), Yorkey's Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 5 (1902).

5457. —— ——. *Assoc.with* Felspar and Hornblende, in quartz. *Loc.* Alma Reef, **Gympie Goldfield**, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 52, p. 8 (1889).

5458. —— ——. *Assoc.with* Anthracite, in cross-cut at 1,300 ft.-level, in 6-in. seam. *Loc.* Australasian Shaft, Australian G.M. Co.'s Mine, Gympie Goldfield (*ante*). *Ref.* B.D.

5459. —— ——. *Assoc.with* Gold, in black shale. *Loc.* Ellen Harkin's Lease (568), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 25 (1889).

5460. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Glanmire Reef, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 6 (1889).

5461. —— ——. *Assoc.with* Gold, in carbonaceous shale. *Loc.* Golden Crown Lease (613), in western shaft, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 31 (1889).

5462. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Gt. Eastern 2 Lease (Inglewood Reef), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 76, p. 2 (1891).

5463. —— ——. *Assoc.with* Galena, in quartz reef. *Loc.* New Dawn Mine, Gympie Goldfield (*ante*). *Ref.* G.S.M.

5464. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Phœnix P.C. (Western Reef), Gympie Goldfield (*ante*). *Ref.* G.S.M.

5465. —— ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* Phœnix 3 N. Lease (799), Gympie Goldfield (*ante*). *Ref.* G.S.M.

5466. —— ——. *Assoc.with* Gold and Galena, in quartz and calcite. *Loc.* Phœnix 2 S. Lease, Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52, p. 25 (1889).

5467. —— ——. *Assoc.with* Gold, in calcareous shale. *Loc.* Wilmot Extd. Lease (628), Gympie Goldfield (*ante*). *Ref.* G.S.Q. Pub. 52. p. 24 (1889).

5468. —— ——. *Assoc.with* Gold, Galena, Siderite, and Zinc Blende, in quartz, between walls of slate and diorite (?). *Loc.* Enterprise Reef, on br. of Cochrane Cr., 5½ miles N.E. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 52, p. 12 (1889).

5469. —— ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Veteran Reef, 7 miles N.N.W. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 52, p. 12 (1889).

5470. —— ——. *Assoc.with* Gold, in gossany quartz. *Loc.* Devil's Mountain, 17 miles N.W. of Gympie. *Co.* March (*ante*). *Ref.* A.R., p. 157 (1908).

5471. —— ——. *Assoc.with* Pyrrhotite, in quartz. *Loc.* Motha Mt., Gympie (*ante*). *Ref.* A.R., p. 152 (1908).

5472. —— ——. *Assoc.with* Hematite. *Loc.* Nr. Noosa, 15 miles N.N.E. of Yandina Rail Stn. (North Coast line), 84 miles (by rail and road) N. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.M.

5473. —— ——. In schist. *Loc.* Selenseburu Cr., Duan (Normanby) Is., D'Entrecasteaux Group, 262 miles E. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 23 (1892).

5474. —— ——. In quartz. Schistose Cliff, Port Moresby, 380 miles N.byE. of Cooktown, Brit. New Guinea. *Ref.* G.S.Q. Pub. 55, p. 2 (1889).

5475. —— ——. In alluvial deposits. *Loc.* Ana (St. Patrick's) Cr., St. Aignan (Misima), 379 miles E.byS. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 85, p. 31 (1892).

5476. —— ——. *Assoc.with* Gold, Hematite, Limonite, and Psilomelane, in quartz. *Loc.* Caledonia Claim, Sudest Is., 448 miles E.S.E. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 85, p. 29 (1892).

5477. —— ——. *Assoc.with* Gold, in quartz. *Loc.* Busai, Woodlark Is., 384 miles E. of Port Moresby, Brit. New Guinea. *Ref.* G.S.M.

Iron Sand. Along the Queensland coast many of the beaches yield iron sand, but not in quantities sufficient to be considered worthy of attention for their iron contents. Sometimes they have been found to contain gold, tin, monazite, and platinum in small quantities, and several attempts have been made to work the deposits where these valuable minerals have been proved to exist.

5478. —— ——. Containing Magnetite. *Loc.* Mt. MacGregor, 2½ miles S.E. of Mt. Toby, 2½ miles N.N.E. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* L.B. 1, p. 94 (1887).

5479. —— ——. Containing Magnetite, as beach deposit. *Loc.* Percy Is. No. 2, Northumberland Group, 60 miles N.E. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* G.S.M.

—— silicates. *See under* Silicates.

Iron Spinel. *See* Hercynite.

—— sulphate. *See* Copperas.

—— sulphides. *See* Bornite, Copper Pyrites, Iron Pyrites, Marcasite, Pyrrhotite.

Ironbark Mine, Collaroy, 25 miles N.W. of St. Lawrence. *Min.Ref.* Gold, *see* 4181; Malachite, 6338; Mispickel, 6771; Silver, 7504.

Ironbarks Sub-artesian Bores. *See under* Artesian Bores. No. 361.

Iron-clad Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1095; Chalcanthite, 1329; Copper Pyrites, 2211; Mispickel, 6738.

—— Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3530; Zinc Blende, 8055.

—— Tin and Copper Mine, Watsonville. *Min.Ref.* Azurite, *see* 190; Cassiterite, 904; Malachite, 6221; Ochre, 4811; Tile Ore, 2546.

Ironpot Cr., trib. of Boyne R., 35 miles N. of Dalby. *Min.Ref.* Coal, *see* 1599; Olivine, 6919.

—— Mt., 12 miles N.N.E. of Rockhampton. *Min.Ref.* Magnesite, *see* 5958.

Ironstone. The following are unclassified Iron Oxides. *See also under* Hematite, Limonite, Magnetite, and Clay Ironstone.

5480. ——. *Assoc.with* Redruthite, Azurite, Malachite, Ilmenite, Calcite, Chlorite, Biotite, in granite quartz, felspar, schist. *Loc.* Mavis's M.L. (315), (Longamundi Group), Dugald R., between 34 and 39 miles N.W. of **Cloncurry.** *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 283, 284 (1908).

5481. ——. *Assoc.with* Almandine, Garnet, Cuprite, Malachite, and Asbolane, with traces of Copper. *Loc.* W. of Mt. Eurie, nr. head of Dugald R., 40 miles N.byW. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 10, p. 7 (1885).

5482. ——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, and Malachite. *Loc.* Contra Copper Lode, ¼-mile S.W. of Gt. Australia Copper Mine, Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

5482A. ——. *Assoc.with* Silver and Gold, in quartz. *Loc.* King Edward VII. Claim, Bishop's Cr., 11 miles E.S.E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* A.R., p. 282 (1910).

5483. ——. *Assoc.with* Gold, in quartz leader. *Loc.* Surprise Leader, E. of Gilded Rose Mine, 11 miles E.S.E. of Cloncurry. *Co.* Beaconsfield (*ante*) *Ref.* G.S.Q. Pub. 104, p. 3 (1895).

5484. ——. *Assoc.with* Bornite, Redruthite, Cuprite, Copper carbonate, and Chrysocolla, in quartz and calcite. *Loc.* Pumpkin Gully Leases, Mt. Douglas, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 153, pp. 6, 7 (1900).

5485. ——. *Assoc.with* Gold, in quartz. *Loc.* Bertha P.C., Bower Bird Goldfield, 70 miles S.W. of Cloncurry. *Co.* Brahe or Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 3 (1895).

5486. ——. *Assoc.with* Gold, in quartz. *Loc.* Lily of the Valley P.C., Bower Bird Goldfield (*ante*). *Ref.* G.S.Q. Pub. 104, p. 2 (1895).

5487. ——. In quartz lode. *Loc.* Police Cr., 90 miles S.S.W. of Burketown. *Co.* Gregory; *Dist.* Burke.

5488. —— (1,000,000 (?) tons in sight). Mt. Oxide, between Torpedo Cr., trib. of Gunpowder Cr., and Myally Cr., trib. of Leichhardt R., 109 miles N.W. of Cloncurry. *Cos.* Kamileroi and Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 359-362 (1908).

5489. ——. Forms thin-bedded Cretaceous deposits. *Loc.* Normanton, W. Coast of Cape York Peninsula. *Co.* Norman; *Dist.* Burke. *Ref.* B.D.

5490. ——. *Assoc.with* Copper Pyrites, and Cuprite. *Loc.* Mascotte M.L. (319), 20 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* A.R., p. 118 (1907).

5490A. ——. *Assoc.with* Gold, Copper (native), Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Limonite, Gothite, Turgite, Calcite, Chlorite, and Selenite, in quartz, quartzite, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 219-224 (1908).

5491. —— (siliceous). *Assoc.with* Gold, Chalcedony, in quartz. *Loc.* Saracinesca Reef, between Rose and Thistle Reef, and Soldier's Cap, 24 miles S.E.byS. of Cloncurry. *Co.* Selwyn (*ante*) *Ref.* G.S.Q. Pub. 104, p. 4 (1893).

5491A. ——. *Assoc.with* Gold, in quartz. *Loc.* Black Fort Mt., nr. Top Camp, 24 miles S.byW. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* A.R., p. 268 (1910).

5491B. ——. *Loc.* Mt. Philp, 40 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* Q.G.M.J., vol. 7, pp. 232, 236 (1906).

5492. ——. *Assoc.with* Manganese-dioxide, in quartz. *Loc.* Two-mile Creek Diggings, 23 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 104, p. 5 (1895).

5493. ——. *Assoc.with* Gold, Iron Pyrites, and Graphite (impure). *Loc.* Come-at-Last Reef, 1¼ mile N.W. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

5494. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Golden Gate 7 N. Lease (346), Golden Gate Mining Centre, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 11 (1896).

5495. ——. *Assoc.with* Gold, in quartz. *Loc.* Iron Duke and Nancy Lee Reefs, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 118, p. 12 (1896).

5496. ——. *Assoc.with* Gold, in quartz. *Loc.* Nancy Lee Reef, Golden Gate (*ante*). *Ref.* G.S.Q. Pub. 35, p. 9 (1887).

5496A.——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* King of Wallabadah Lease (410), Golden Valley, 12 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, pp. 40, 41 (1896), and G.S.M.

5497. ——. *Assoc.with* impure Graphite, in quartz. *Loc.* Norah Reef, ¾-mile N.W. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

5498.——. *Assoc.with* Gold, impure Graphite, and Chlorite, in quartz. *Loc.* Sir Walter Reef, ½-mile E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

5499. ——. *Assoc.with* Gold and Manganese-dioxide, in quartz. *Loc.* Homeward Bound Reef, 4½ miles N.E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

5500. ——. *Assoc.with* Gold, in quartz. *Loc.* Mulligan's P.A., Corktree Cr., 5 miles E.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

5501. ——. *Assoc.with* Gold, Galena, Anglesite, and Massicot, in quartz. *Loc.* Ace of Hearts Reef, Tabletop, 9 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 35 (1896).

5502. ——. *Assoc.with* Gold and Massicot, in quartz. *Loc.* Comet Reef, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

5503. ——. *Assoc.with* Gold, Cerussite, and Pyromorphite, in quartz. *Loc.* Federation Reef, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

5504. ——. *Assoc.with* Native Silver. *Loc.* True Blue Reef, 1¾ mile N.W.byN. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Assay:* Gold = 4 oz. per ton, Silver = 200 oz. per ton. *Ref.* B.D.

5504A.——. *Assoc.with* Malachite, in ferruginous quartz. *Loc.* Dobbyn 1 N. M.L. (679), (Dobbyn Group), Coolullah, 70½ miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 341 (1908).

5505. ——. *Assoc.with* Cuprite, Copper carbonate, and Quartz, in schist. *Loc.* Mount Cuthbert, 19 miles S.W. of Coolullah, 63 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 153, p. 9 (1900).

5506. ——. *Assoc.with* Copper Pyrites, Malachite, Chrysocolla, Iron Pyrites, Limonite, and Magnesite, in kaolinised schist. *Loc.* Mt. Cuthbert 1 and 2 S. M.L.'s (257 and 294), (Mt. Cuthbert Group) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 321, 322, (1908).

5507. ——. *Assoc.with* Malachite. *Loc.* Mt. Cuthbert S. Lease, Mt. Cuthbert Group (*ante*). *Assay:* Copper = 32·1 per cent., Gold = 13 grs. per ton, Silver = 16 dwt. per ton. *Ref.* A.R., p. 46 (1906).

5508. ——. *Assoc.with* Limestone. *Loc.* Flinders R., 18 miles N.W. of Warreah Rail. Stn. (Hughenden line). *Co.* Wongalee; *Dist.* Burke. *Ref.* G.S.Q. Pub. 44, p. 1 (1888).

5509. ——. *Assoc.with* Gold, in sandstone. *Loc.* Pride of Gibangle, Gibangle, 12 miles N.W. of Degilbo Rail. Stn. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

5510. ——. *Assoc.with* Minium. *Loc.* Rose and Thistle Silver Lode, Didcot Cr., Mt. Melville, 2½ miles N. of Chowey Rail. Stn. (Gayndah line), 65 miles (by rail and road)) W. of Maryborough. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

5511. ——. *Assoc.with* Manganese-dioxide, in quartz reef. *Loc.* At foot of Mt. Melville, nr. Didcot and Chowey Creeks, 2½ miles N.byW. of Chowey Rail. Stn. (*ante*). *Assay: See* No. 3570. *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

5512. ——. *Assoc.with* Gold, Iron Pyrites, and Molybdenite. *Loc.* White's Reef, Mt. Ophir, Chowey Cr. (*ante*). *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

5513. ——. Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 173, p. 4 (1902).

5514. Ironstone. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Copper Pyrites, Native Bismuth, Bismuthinite, and Magnetite, in lode. *Loc.* Don Jon Bismuth Mine, Mt. Havilah, 1 mile N. of Biggenden Rail. Stn., and 2¾ miles S.S.W. of Degilbo Rail. Stn. (*ante*). *Ref.* G.S.Q. Pubs. 173, p. 4 (1902), and 207, pp. 13, 14 (1907).

5515. ——. *Assoc.with* Gold, in quartz. *Loc.* Neill's Paradise G.M. Co.'s P. Area, Paradise Goldfield, 8 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 68, p. 3 (1891).

5515A. ——. *Assoc.with* Redruthite, Malachite, Azurite, Barytes, and Calcite. *Loc.* Burnett Range, nr. Gaeta, about 23 miles N.byW. of Mt. Perry Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* A.R., p. 263 (1910).

5516. ——. *Assoc.with* Gold, Galena, and Iron Pyrites, in quartz. *Loc.* Mt. Rose United Mine, Mt. Rose Reef, Eidsvold Goldfield, Burnett R., 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol (*ante*). *Ref.* G.S.Q. Pub. p. 43, p. 2 (1887).

5517. ——. *Assoc.with* Gold, Tetrahedrite, Cuprite, Azurite, Malachite, and Chalcanthite, in lodes in gneiss and schist. *Loc.* Arbouin Mines, between Nondah Cr. and Walsh R., 18 miles W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 134, pp. 13, 14 (1898).

5518. ——. *Assoc.with* Gold, in quartz. *Loc.* Mt. Buchanan, Oaky Cr., 12 miles S.E.byS. of Maytown, Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.Q. Pub. 123, p. 8 (1897).

5519. ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* Mt. Madden, Oaky Cr., 13 miles S.E.byS. of Maytown, Palmer Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 108, p. 11 (1896), and 123, p. 8 (1897).

5520. ——. In bed of Batavia River, nr. Moreton Telegraph Stn., Cape York Peninsula. *Co.* Dalhunty; *Dist.* Cook. *Ref.* G.S.Q. Pub. 180, p. 9 (1902).

5521. ——. *Assoc.with* Gold and Manganese-dioxide, in quartz. *Loc.* Lady Franklin Reef, Caledonia Cr., trib. of Goldsmith Cr., 28 miles S.S.E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

5522. ——. *Assoc.with* Cassiterite and Manganese-dioxide, in altered sandstone and quartzite. *Loc.* Tourmaline United Mine, on Baker's Cr., Bakerville, 4 miles W. of Watsonville, Walsh and Tinaroo Mineral Fields *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 27 (1897).

5523. ——. *Assoc.with* Cassiterite and Siderite, in quartzite *Loc.* Federation Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 119, p. 24 (1897).

5524. ——. *Assoc.with* Cassiterite, in porphyry. *Loc.* Leinster Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 22 (1883).

5525. ——. *Assoc.with* Cassiterite and Wolfram, in chlorite. *Loc.* Parnell Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

5526. ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Iron Pyrites, Mispickel, Cassiterite, Stannite, Wolfram, Fluorspar, and Chlorite. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 26 (1883), 119, p. 15 (1897).

5527. —— (pisolitic). *Assoc.with* Clay. *Loc.* Vrilya Point, West Coast, Cape York Peninsula. *Co.* Jardine; *Dist.* Cook. *Analysis:* Moisture = 2·89 per cent.; Silica = 32·64 per cent.; Iron = 16·0 per cent.; Alumina = 28·18 per cent. *Ref.* G.S.Q. Pub. 180, pp. 7, 9 (1902).

5528. ——. *Assoc.with* Cerussite and Anglesite, in gossan. *Loc.* Quetta (Skardon's) Silver Mine, Dargalong, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* (and *Assay*) G.S.Q. Pub. 69, p. 10 (1891).

5529. ——. Mt. Lucy, 4 miles W. of Almaden Rail. Stn. (Chillagoe line), 125 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Analysis:* Silica = 1·10 per cent.; Alumina = 2·33 per cent.; Iron = 67·30 per cent.; Manganese = 0·29 per cent.; Lime = trace; Magnesia = nil; Phosphorous = 0·33 per cent.; Sulphur = 0·01 per cent. *Ref.* A.R., p. 12 (1907).

5530. ——. *Assoc.with* Galena, Cerussite, and Malachite, in quartz and clay. *Loc.* Girofla Mine, Opera Cr., 4 miles W. of Zillmanton Rail. Stn. (Chillagoe line), and 146 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 69, p. 3 (1891), and B.D.

5531. ——. *Assoc.with* Limonite, Siderite, Tetrahedrite, Malachite, and Manganese-dioxide. *Loc.* Queenslander Lease, Red Cap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mneral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

5532. ——. *Assoc.with* Gold and Cassiterite, in gravelly alluvial deposits. *Loc.* Claims on Terraces, Russell Goldfield, 15 to 20 miles W.N.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 89, pp. 80, 81 (1893).

5533. ——. *Assoc.with* Gold, in quartz. *Loc.* Mt. Bartle Frere, Christmas Cr., Mulgrave R., Russell Extd. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

5534. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Lower Crossing, Peach R., Cape York Peninsula, 180 miles N.W. of Cooktown. *Co.* Sidmouth; *Dist.* Cook. *Ref.* G.S.M.

5535. —— (pisolitic). *Assoc.with* Clay. *Loc.* South Shore, Batavia R., West Coast, Cape York Peninsula. *Co.* Weipa; *Dist.* Cook. *Analysis:* Moisture = 2·23 per cent.; Silica = 42·53 per cent.; Iron = 6·72 per cent.; Alumina = 33·35 per cent. *Ref.* G.S.Q. Pub. 180, p. 9 (1902).

5536. —— (pisolitic). Embley R., West Coast, Cape York Peininsula (*ante*). *Ref.* G.S.Q. Pub. 180, p. 7 (1902).

5537. ——. Eight miles inland and 1 mile along the northern tributary of the Pascoe R., Weymouth Bay, Bowden Mineral Field, 240 miles N.W. of Cooktown. *Co.* Weymouth; *Dist.* Cook.

5537A.——. *Assoc.with* Cuprite, Tetrahedrite, Malachite, Azurite, in lodes. *Loc.* Tartana Hill, Bowler Cr., Ashtonville, 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line). *Co.* Wrotham; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, pp. 15, 16 (1898).

5538. ——. *Loc.* Ellerton Park, Broxburn, 33 miles (by rail) S.W. of Toowoomba (Pittsworth Br. line). *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* O.R.

5539. ——. *Assoc.with* Galena, Copper Pyrites, Redruthite, Copper carbonate, Zinc Blende, and Manganese-dioxide, in lode. *Loc.* Pikedale Silver Mine, Pikedale Head. Stn., Woolshed Gully, 20 miles W.byS. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, p. 87 (1898).

5540. ——. Two miles from Silver Queen Silver Mine, 8 miles W. of Ballandean, 22 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*).

5541. ——. *Assoc.with* Gold, Pyrargyrite, Iron Pyrites, Galena, Cerussite, Cuprite, Tile Ore, Copper Pyrites, Malachite, Azurite, Zinc Blende, Smithsonite, and Calcite, in lode. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pubs. 120 (1898), and 191 (1904).

5542. ——. Silver Spur Mine (*ante*). *Analysis:* Ferric oxide = 85·22 per cent., Manganese-dioxide = 1·69 per cent., Alumina = 5·50 per cent., Silica = 4·94 per cent., Water = 2·65 per cent., Undetermined = 1·69 per cent. *Ref* G.S.Q. Pub. 191, p. 37 (1904).

5543. ——. *Assoc.with* Gold, in quartz. *Loc.* Just-in-Time Reef, 1 mile W. of Mt. Gammie, Thane's Cr. Goldfield, 25 miles W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 40, p. 2 (1887).

5544. ——. *Assoc.with* Gold, in lode. *Loc.* Spur from Mt. Gammie, Thane's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 40, p. 3 (1887).

5545. ——. *Assoc.with* Azurite and Malachite. *Loc.* Trikelana M.L. (522), (Trikelana Group), 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Assay:* : Gold = trace, Silver = 3 dwt. 12 gr. per ton; Copper = 38·7 per cent. *Ref.* A.R., p. 116 (1907).

5546. ——. *Assoc.with* Galena, Massicot, Copper carbonate, and Ironstone, in gossan. *Loc.* Silver Streak Mine, Dry R., br. of Wild R. (Upper Herbert), 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

5547. ——. *Assoc.with* Cassiterite, Copper, Bismuth (native), in lode. *Loc.* Lancelot Tin Mines (Winze Shaft), Newellton, 9 miles S.W. of Herberton, 6 miles E.S.E. of Irvinebank, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 119, p. 27 (1897).

5548. ——. *Assoc.with* Limestone and Garnet Rock. *Loc.* Newellton (Silver Valley), 10 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*).

5549. ——. *Assoc.with* Gold, in quartz. *Loc.* McColl's Just-in-Time P.C. (Just-in-Time Reef), Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* W C.T.

5550. Ironstone. *Assoc.with* Iron Pyrites, Magnetite, Malachite, Graphite, Garnet, and Calcite. *Loc.* Double Barrel Cr. (Manton), Northern Rail. line, 27 miles (by rail) S. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* L.B. 2, pp. 720, 729 (1892).

5551. ——. *Assoc.with* Gold, in quartz. *Loc.* Barcoo Reef, Mt. Remarkable, 6 miles W.byN. of Pentland Rail. Stn., 72 miles (by rail and road) S.W.byW. of Charters Towers, Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 5 (1891).

5552. ——. *Assoc.with* Gold, in quartz. *Loc.* Hayward Reef, Pentland, 66 miles (by rail) S.W.byW. of Charters Towers, Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

5553. ——. *Assoc.with* Gold, Galena, and Iron Pyrites, in quartz. *Loc.* Harp of Erin Mine, Upper Cape, 17 miles W.byN. of Cape R. Rail. Stn., Cape R. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

5554. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Wheel of Fortune Reef, Upper Cape (*ante*). *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

5555. ——. In quartz. Marengo Goldfield, 30 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* A.R., p. 92 (1907).

5556. ——. In decomposed porphyry. *Loc.* Mt. St. Paul, 14 miles S. of Dreghorn Diggings, 29 miles S. of Ravenswood Rail. Stn. *Co.* Murray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

5557. ——. *Assoc.with* Cassiterite, Bismuth Ore, and Copper carbonate, in quartz crystals. *Loc.* Achilles Lease (252), Butterfly Gully, Mt. Brown, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 9 (1892), and G.S.M.

5558. ——. *Assoc.with* Galena, Cerussite, and Manganese-dioxide, in chloritic lode. *Loc.* Hidden Treasure E. Lease (166), Kangaroo Hills Mineral Fields (*ante*). *Assays: See* No. 2966. *Ref.* G.S.Q. Pub. 82, pp. 6, 7 (1892).

5559. ——. *Assoc.with* Cerussite and Copper carbonate, in gossan and kaolin lode. *Loc.* Junction Lease (181), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

5560. ——. *Assoc.with* Cerussite and Copper carbonate, in garnet, kaolin, and gossan lode. *Loc.* Junction South Lease (180), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

5561. ——. *Assoc.with* Cerussite, in lode. *Loc.* Kairanga Lease (217), 1 mile W. of Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 18 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

5562. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Manganese-dioxide, Zinc Blende, Smithsonite, Mispickel, Hematite, Fluorspar, and Garnet, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

5563. —— (manganiferous), in western lode. *Loc.* Mt. Moss S. Lease (168), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

5564. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Bornite, Cuprite, Tenorite, Copper carbonate, Galena, and Zinc Blende, in lode. *Loc.* Mt. Theckla Copper and Silver Mine, 4 miles N. of Ewan, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 167, p. 7 (1901).

5565. ——. *Assoc.with* Cerussite and Copper carbonate, in lodes. *Loc.* Running River S. Lease (163), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 82, p. 11 (1892).

5566. ——. *Assoc.with* Manganese-dioxide, in quartz. *Loc.* Vigilant Lease (193), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 7 (1892).

5567. ——. *Assoc.with* Cerussite, Copper carbonate, and Manganese-dioxide, in lode. *Loc.* White Star Lease (160), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

5568. ——. With traces of Minium, in quartz reef. *Loc.* Albion Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

5569 ——. *Assoc.with* Galena and Minium, in lode. *Loc.* Ard Righ Lease (112), Star R. (Argentine) Mineral Field (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 26, p. 6 (1886).

5570. ——. *Assoc.with* Minium, Massicot, Anglesite, and Cerussite, in quartz reef. *Loc.* Bonanza Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

5570A.——. *Assoc.with* Minium. *Loc.* Bonanza North Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

5571. ——. *Assoc.with* Galena, Minium, Cerussite, Copper Pyrites, Mispickel, Malachite, Manganese-dioxide, and Iron Ochre. *Loc.* Colorado Silver Mine, Star River (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 7 (1886).

5572. ——. *Assoc.with* Minium, Anglesite, and Cerussite, in ferruginous quartz. *Loc.* Eureka Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

5573. ——. *Assoc.with* Cerussite and Lead Ochre, in lode. *Loc.* Excelsior Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

5574. ——. *Assoc.with* Minium, Anglesite, and Galena, in lode. *Loc.* Hero Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, pp. 2, 3 (1886).

5575. ——. *Assoc.with* Galena, Minium, Massicot, and Cerussite, in quartz. *Loc.* John Bull Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay: See* No. 2986. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

5576. ——. *Assoc.with* Minium and Cerussite, in lode. *Loc.* Jones's Sel. (139), Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

5577. ——. *Assoc.with* Minium, Cerussite, and Lead Gossan, in lode. *Loc.* Morrison's and Co.'s Sel. (165, 166), Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26. pp. 5, 6 (1886).

5578. ——. *Assoc.with* Galena, Minium, and Cerussite, in schistose gangue. *Loc.* Overlander Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay:* Silver = 150 oz. per ton, Lead = 65 per cent. *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

5579. ——. *Assoc.with* Galena and Lead Ochre, in gossan. *Loc.* Southern Cross Mine, Star R. (Argentine) Mineral Field. *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

5580. ——. *Assoc.with* Galena, Minium, Anglesite, and Cerussite, in lode. *Loc.* St. John's Silver Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

5581. ——. *Assoc.with* Siderite, Cerussite, and Pyrolusite. *Loc.* Struck Oil Freehold (149), Star R. (Argentine) Mineral Field (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 26, p. 4 (1886), and L.B. 1, p. 888 (1887).

5582. ——. *Assoc.with* Galena, Minium, Massicot, Anglesite, and Cerussite, in ferruginous gossan. *Loc.* Washington 1 and 2 Mines, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

5583. ——. *Assoc.with* Iron Pyrites, Turgite, Limonite, Galena, and Copper Pyrites, in quartz. *Loc.* Broken R. Gold and Silver Pros. Co.'s Claim, Bee Cr. Diggings, 60 miles W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Assay:* Gold = 1 oz. per ton; Silver = 60 to 70 oz. per ton. *Ref.* G.S.Q. Pub. 54, p. 2, 3 (1889).

5584. ——. *Assoc.with* Gold, in quartz reefs. *Loc.* Bell's Sel. (615), S. of Mt. Chelona, 6 miles S.E.byS. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 39, p. 3 (1887).

5585. ——. *Assoc.with* Gold, in felspar and quartz lode. *Loc.* Golden Cross Lease, Grass-tree Goldfield, 17 miles S.byE. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 93, p. 4 (1893).

5586. ——. *Assoc.with* Gold, Iron Pyrites, Siderite, Yellow Ochre, Copper Pyrites, Mispickel, and Tetrahedrite, in quartz. *Loc.* Grace Darling Lease (11), Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Assay: See* No. 4128. *Ref.* G.S.Q. Pub. 5, p. 6 (1879), and 88, p. 3 (1893).

5587. ——. *Assoc.with* Gold, Iron Pyrites, Malachite, and Chlorite, in quartz reef. *Loc.* Head of Spring Cr., Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 5, p. 7 (1879).

5588. ——. *Assoc.with* Gold, Copper Pyrites, Tetrahedrite, Tenorite, Malachite, Azurite, and Galena. *Loc.* Pine Vale Cr. Copper Mine, 9 miles S.byE. of Eton Rail. Stn., 32 miles (by rail and road) S.byW. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 53, p. 10 (1889); Pub. 229, pp. 12-17 (1910).

5589. ——. *Assoc.with* Gold, Marcasite, Psilomelane, and Epsomite, in alluvial deposits. *Loc.* Paterson's Claim, McMaster's (Top Camp), 14 miles N.W.byN. of Clermont Rail. Stn. *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 201, p. 63 (1906).

5590. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* between 7-Mile and 2-Mile Diggings, 15 miles N.W.byW. of Clermont. *Co.* Rutledge (*ante*). *Ref.* G.S.Q. Pub. 27, p. 2 (1886).

5591. Ironstone. *Assoc.with* Gold, Hematite, Copper Pyrites, Cuprite, Malachite, Azurite, Galena, Native Bismuth, Bismuthinite, Bismutite, Bismite, and Manganese-dioxide, in lode. *Loc.* Daisy Bismuth Mine, N. side of Mt. Wyatt and Bowen Road, 3 miles E. of Eukalunda, 95 miles S.W.byS. of Bowen, Sellheim Mineral Field. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 57, p. 8 (1889).

5592. ——. *Assoc.with* Iron Pyrites, Galena, Minium, Anglesite, Cerussite, and Zinc Blende, in lode. *Loc.* Pyramid Silver Lode, ½-mile S. of Daisy Bismuth Mine (*ante*). *Ref.* G.S.Q. Pub. 57, pp. 2, 3 (1889).

5593. ——. *Assoc.with* Silver, Iron Pyrites, Galena, Minium, Cerussite, and Zinc Blende, in lode. *Loc.* Rob Roy Mine, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Assays: See* No. 3017. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

5594. ——. *Assoc.with* Gold. *Loc.* Cumberland Reef, 1 mile N. of Clermont Rail. Stn., Clermont Goldfield. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 27, p. 4 (1886).

5595. ——. *Assoc.with* Gold, in quartz and limestone. *Loc.* Lincoln Leaders, 2½ miles S.W. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 176, p. 22 (1902).

5596. ——. *Assoc.with* Gold, in quartz. *Loc.* Bedsford's Reef, McDonald's Flat, 4 miles S.S.E. of Clermont, Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 176, p. 19 (1902).

5597. ——. *Assoc.with* Limestone. *Loc.* Nr. Mt. Clifford, between Retreat and Ruby Crs., 9½ miles N.W. of Anakie Rail. Stn. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 127, p. 2 (1892).

5598. ——. *Assoc.with* Azurite and Malachite, in pipe vein. *Loc.* Freedom of Contract Mine, Ruby Cr., 6½ miles N.E.byN. of Withersfield Rail. Stn. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 81, p. 4 (1892).

5598A. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Malachite, and Azurite, in slate. *Loc.* Isen's M.F. (2642), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, pp. 27-29 (1910).

5599. ——. *Assoc.with* Gold and Calcite. *Loc.* Southern Cross Reef, Yatton Goldfield, 21 miles S.W. of St. Lawrence. *Co.* Killarney (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

5599A. ——. *Assoc.with* Gold, in serpentine. *Loc.* Mt. Blowhard (Mt. Hope), 52 miles S.S.W. of Rockhampton. *Co.* Pakington; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 8 (1901).

5600. ——. *Assoc.with* Azurite and Malachite, in pipe of ore. *Loc.* Ruby Cr., 8 miles N.N.W. of Anakie Rail. Stn., 201 miles (by rail) W. of Rockhampton (Central (line). *Co.* Plantaganet; *Dist.* Leichhardt.

5601. ——. In vicinity of Coal and Limestone. *Loc.* Girrah Lease, 20 miles N. of Tolmie's Rail. Stn. (Central line), 149 miles (by rail and road) W. of Rockhampton. *Co.* Talbot; *Dist.* Leichhardt. *Ref.* B.D.

5602. ——. *Assoc.with* Chlorite and Steatite, in shale and diorite. *Loc.* Keeley and Valentine's Claim, Nuggety Gully, Mt. Britton Goldfield, 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

5603. ——. Corona Stn. (Central line), 60 miles N.W. of Longreach Rail. Stn., 488 miles (by rail and road) W. of Rockhampton. *Co.* Musgrave; *Dist.* **Mitchell.**

5604. ——. Achelow Cr., 24 miles W.byN. of Longreach Rail. Stn. (Central line), 452 miles (by rail) W. of Rockhampton. *Co.* Pentland (*ante*).

5605. ——. Ten miles N.E. of Cameron R., 18 miles N.E. of Muttaburra. *Co.* Towerhill; *Dist.* Mitchell.

5606. ——. *Assoc.with* Gold and Malachite, in quartzite. *Loc.* Blackbutt, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.**

5607. ——. In felspathic sandstone. Mt. Stanley, nr. Nanango, about 17 miles N. of Benarkin Rail. Stn. (Brisbane-Valley line), 128 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 29, p. 1 (1886).

5608. ——. *Assoc.with* Gold, Copper Oxide, and Malachite, in quartz. *Loc.* Black Diamond Mine, nr. Taromeo, 6 miles W.N.W. of Benarkin Rail. Stn. (Boyne-Valley line). *Co.* Cavendish (*ante*). *Assay: See* No. 4203. *Ref.* G.S.Q. Pub. 159, p. 25 (1901).

5609. ——. In quartzite. *Loc.* Pine Mt., 17 miles N.W.byN. of Ipswich (Brisbane-Valley Br. line). *Co.* Churchill (*ante*). *Ref.* G.S.Q. Pub. 103, p. 27 (1895).

5610. ——. Moggill Cr., Brookfield, 10 miles W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* L.C.B.

5611. ——. S.E. Por. of Sel. 194, Brookfield (*ante*). *Ref.* G.S.Q. Pub. 63, p. 2 (1890).

5612. ——. Eight-mile Plains, 8 miles S.E. of Brisbane. *Co.* Stanley; *Dist.* Moreton.

5613. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Gold Mines, on Pors. 236, 241A, and 289, Gold Cr., Par. of Indooroopilly, 10 miles W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 108, p. 25 (1896).

5614. ——. *Assoc.with* Manganese-dioxide, in vein. *Loc.* Dennis's Sel. 381, 5 miles N. of Beenleigh (S. Coast line), 29 miles (by rail and road) S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton *Ref.* G.S.Q. Pub. 36, p. 2 (1887).

5614A.——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* 5 miles S. of Beenleigh Rail. Stn. (South Coast line), 29 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* A.R., p. 217 (1910).

5615. ——. *Assoc.with* Manganese-dioxide, in quartz reef. *Loc.* Jamieson's Sel. 36, Wonga Wallen Cr., Coomera R., 38 miles (by rail) S.E. of Brisbane (South Coast line). *Co.* Ward (*ante*).

5616. ——. With traces of Gold and Silver. *Loc.* Por. (5), Par. of Nerang, 49 miles (by rail) S.E.byS. of Brisbane (South Coast line). *Co.* Ward (*ante*). *Ref.* A.R., p. 48 (1888).

5516A.——. *Assoc.with* Pyrolusite, in quartz. *Loc.* Auckland Point, 1 mile N.W.byN. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 21, p. 1 (1885).

5617. ——. *Assoc.with* Gold (traces), Silver, Wollastonite, Epidote, and traces of Copper carbonate, in limestone, garnet rock, and granite. *Loc.* P.A. 49, Diglum Cr., 28 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 162, pp. 6, 9 (1901).

5617A.——. *Assoc.with* Manganese-dioxide. *Loc.* Gardner's Workings, Por. 364, East Stowe, 10 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* (and *Analysis*) G.S.Q. Pub. 194, p. 46 (1904).

5617B.——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, and Malachite, in crystalline limestone. *Loc.* Mt. Hector Copper Mine, E. side of Dawe's Range, 60 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* Q.G.M.J., vol. 4, pp. 174-177 (1903).

5618. ——. *Assoc.with* Gold, in felsitic dyke. *Loc.* Jack Mine, Ulam Goldfield, 36½ miles W.N.W. of Gladstone. *Co.* Deas Thompson (*ante*). *Ref.* G.S.Q. Pub. 99, p. 7 (1894).

5619. ——. *Assoc.with* Gold and Iron Pyrites, in ferruginous quartz. *Loc.* St. Joseph United Mine, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 10 (1894).

5620. ——. *Assoc.with* Gold and Iron Pyrites. *Loc.* True Blue Reef, Ulam Goldfield (*ante*). *Ref.* G.S.Q. Pub. 99, p. 5 (1894).

5621. ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Miner's Dream Mine, Bob's Cr., Crocodile Goldfield, 13 miles S. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 132, p. 16 (1898).

5622. ——. Olsen's Caves, 15 miles N.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.M.

5623. ——. *Assoc.with* Gold, in quartz. *Loc.* Mouth of Inlet nr. Green Hill, 40 miles S. of Mackay. *Co.* Murchison; *Dist.* Port Curtis. *Assay:* Gold = 4 oz. 18 dwt. per ton.

5624. ——. *Assoc.with* Gold, in quartz. *Loc.* Westwood Reef, Ridge between Slack's and Sandy Crs., 5½ miles S.E. of Westwood Rail. Stn., 36½ miles (by rail and road) S.W. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* (and *Assays*) G.S.Q. Pub. 103, p. 30 (1895).

5625. ——. Iron Island, nr. Broadsound, Duke Group, 40 miles N.E. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Analysis:* Silica = 2·78 per cent., Alumina = 4·16 per cent., Iron = 64·80 per cent., Manganese = 0·18 per cent., Lime = trace, Magnesia = nil, Phosphorus = 0·03 per cent., Sulphur = trace, Titania = slight trace. *Ref.* A.R., p. 122 (1907).

5625A.——. *Assoc.with* Native Copper, Cuprite, and Telluride Ore, in schist. *Loc.* Stanage Point, nr. Broadsound, 37 miles E.N.E. of St. Lawrence. *Co.* Palmerston (*ante*). *Ref.* B.D.

5626. ——. *Assoc.with* Gold, in quartz. *Loc.* Mt. Hope (Homeward Bound) Reef, Cania Goldfied, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 9 (1885).

5627. Ironstone. *Assoc.with* Copper Pyrites, Copper Carbonate, Mispickel, Biotite, and Mica, in quartz lode. *Loc.* Dee R. Copper Mines, above Dundee, 20 miles S.S.W. of Mt. Morgan Rail. Stn. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 155, p. 8 (1901).

5628. ——. In garnet rock. Glen Dee, Dee R., 5 miles E.N.E. of Mt. Morgan Rail. Stn. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 161, p. 15 (1901).

5629. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Native Copper, Copper Pyrites, Redruthite, Cuprite, Malachite, Azurite, Galena, and Molybdenite, in granitic rock, breccia, and sandstone. *Loc.* Moonmera Copper Mines, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 195, p. 22 (1904).

5630. ——. In lodes. Mt. Alexander, 8 miles E.S.E. of Mt. Morgan, 32 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 132, p. 17 (1898).

5631. ——. *Assoc.with* Gold, Iron Pyrites, and Copper carbonate, in serpentine and quartzite. *Loc.* Mt. Morgan N. Mine, Crocodile Goldfield, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 132, p. 8 (1898).

5632. ——. *Assoc.with* Gold, in quartz and calcite. *Loc.* Tableland Reef, Black Snake Goldfield, 10 miles S. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

5633. ——. In beds of sandstone. *Loc.* Miva Crossing, Mary River, 26 miles N.W. of Gympie, 43 miles (by rail) S.S.W. of Maryborough (Kilkivan Br. line). *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 1 (1886).

5633A.——. *Assoc.with* Gold and Iron Pyrites, in quartz lode. *Loc.* P.A. 815, 7 miles (by road) W. of Kilkivan. *Co.* Lennox (*ante*). *Ref.* A.R., p. 235 (1910).

5634. ——. *Assoc.with* Native Copper, in chloritic rock. *Loc.* Lady Flora Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane (North Coast line). *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 52, p. 5 (1889).

—— Statistics :—*See tables and diagrams*, Pls. 41, 45, 46, 46A, 53, 57.

Irvinebank.

SITUATION: *See maps*, Pls. 8, 9, 22. The town is about 12 miles (by rail) S.W. of Stannary Hills Rail. Stn. (Chillagoe Br. line), 12 miles W.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Lat.*, 17° 25′; *Long.*, 145° 13′.

POPULATION: 1,256 (estimated 1910). Now included in Herberton.

MINERAL STATISTICS: Tin, included in Herberton Min. Field Returns. *See* Pls. 38, 46, 46A.

MINERAL REFERENCES: Silver (Cerargyrite), 1178; Lead (Anglesite) 17, (Cerussite) 1191, 1192, (Galena) 2766; **Tin** (Cassiterite) 858-874; Bismuth (Native) 332, 333; (Bismuthinite) 365, 366; Iron (Hematite) 4709, (Turgite) 7892; Limestone, 634. Other Minerals—Chlorite, 1432, 1433; Fluorspar, 2659; Kaolin, 5676, 5676A; Tourmaline, 7852.

GEOLOGICAL NOTE: The Geological Formations consist of a series of folded greywackes, quartzites, and slates, broken by faults. Along the faults, and in the rocks on either side, deposits of tin ore in irregular bunches occur. *See* G.S.Q. Pubs. Nos. 119 and 192 for details and maps.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 119, 192. Map No. 220. *See* Geol. Surv. Pub. List for title. *See also under* Govt. Ming. Jour. Special Reports, No. 90.

SMELTING WORKS: *See under* Smelting Works in Queensland.

WARDEN and INSPECTOR OF MINES: Both stationed at Herberton.

—— Company's Treatment Works. *See under* Govt. Ming. Jour. Special Reports, No. 90.

Irvingdale Sub-artesian Bores. *See under* Artesian Bores. Nos. 240, 295.

Isaacs River. Rises in Denham Range, 65 miles W.byS. of Mackay. Flows S.byE. into Mackenzie R., 41 miles S.byW. of Mackay. Length about 180 miles. *Min.Ref.* Coal, *see* 1683; Opal (common and wood), 6985.

GEOLOGICAL NOTE: The country drained by the Isaacs River is made up of strata belonging to the Bowen River Formation, the equivalent of the Dawson-Mackenzie Coal measures (Permo-carboniferous).

Isabella Cr., Sellheim R., S.W.byS. of Bowen. *Min.Ref.* Gold (alluvial), *see* 3292.

—— M.C. (360), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2120; Limonite, 5826; Malachite, 6188; Redruthite, 7275; Tile Ore, 2542.

—— Mine, Mt. Wyatt. *Min.Ref.* Gold, *see* 3683.

—— Reef, Normanby Reefs, S.S.W. of Cooktown. *Min.Ref.* Gold, *see* 3683.

Isen's M.F. (2642), Mt. Flora Gold and Mineral Field. *Min.Ref.* Azurite, *see* 235G; Copper Pyrites, 2269B; Iron Pyrites, 5327B; Ironstone, 5598A; Malachite, 6339J.

Iserine. *See* Ilmenite.

Isis Downs Bore. *See under* Artesian Bores. No. 298.

Isis River. Heads at Main Coast Range, 40 miles N.N.W. of Maryborough, flows N.E. into the Burrum R., 24 miles N.N.W. of Maryborough. Length about 35 miles. *Min.Ref.* Coal, *see* 1813; Opal (common), 6998A.

GEOLOGICAL NOTE: The principal rocks are sandstones and shales of Burrum Formation (Cretaceous), containing workable seams of coal. Marine beds also occur, and appear to be the basement beds of the Burrum Series. *See* G.S.Q. Pub. No. 170 for notes.

—— Scrub, nr. Childers Rail. Stn. *Min.Ref.* Coal, *see* 1814.

Isisford Sub-artesian Bores. *See under* Artesian Bores. Nos. 299, 300.

Island Sub-artesian Bore. *See under* Artesian Bores. No. 278.

Italian Gully, trib. of White Mountain Cr., W.byN. of Pentland. *Min.Ref.* Gold (alluvial), *see* 3190, (nugget) 3437.

—— M.L. (689), Cloncurry. *Min.Ref.* Copper (native), *see* 1996; Copper Pyrites, 2201; Limonite, 5862; Malachite, 6259; Redruthite, 7286; Tile Ore, 2553.

—— Mine, Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2819; Gold, 3811; Iron Pyrites, 5095.

Ithaca Creek. Heads nr. Mt. Cootha, 4½ miles W.byS. of Brisbane, and flows N.E. to join Breakfast Cr., 2¼ miles N.W. of Brisbane. *Min.Ref.* Copper Pyrites, *see* 2279; Garnet, 3138; Gold, 4217; Mispickel, 6778.

Ivanhoe Copper Lease, Cloncurry. *Min.Ref.* Azurite, *see* 205; Cuprite, 2448; Limonite, 5861; Malachite, 6258.

—— Gold Mine, Towalla Goldfield. *Min.Ref.* Gold, *see* 3783.

—— Tin Mine, Eureka Cr., nr. Stannary Hills. *Min.Ref.* Stannite, *see* 7594.

—— —— ——, Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 760; Galena, 2691.

Inveragh Copper Lode, Iveragh Cr., S. of Gladstone. *Min.Ref.* Azurite, *see* 250; Cuprite, 2475; Malachite, 6362.

Jabiru Bore. *See under* Artesian Bores. No. 178.

Jack (Dr. R. L.).

GEOLOGICAL SURVEY PUBLICATIONS—

(1.) On the Geology and Mineral Resources of the District between Charters Towers Goldfield and the Coast, 1878 (1879).

(2.) Geological Features of Part of the Coast Range between the Dalrymple and Charters Towers Roads, 1878 (1879).

(3.) Preliminary Report on the Bowen River Coalfield, 1878 (1879).

(4.) On the Bowen River Coalfield, 1878 (1879).

(5.) On the Normanby and Marengo Goldfields, 1879.

(6.) On the Progress of the Search for Coal in the Cook District, 1879.

(7.) Second Report on the Progress of the Search for Coal in the Cook District, 1879.

(8.) On Explorations in Cape York Peninsula, 1879-80 (1881).

(9.) Further Reports on the Progress of the Gold Prospecting Expedition in Cape York Peninsula, 1880; and Report on the Wild River Tin Mines, 1880 (1881).

(10.) Six Reports on the Geological Features of Part of the District to be traversed by the Proposed Transcontinental Railway, 1881, 1882 (1885).

Geological Survey Publications—*continued:*

(11.) On the Little River Coalfield, near Cooktown, 1882.

(12.) On the Stanthorpe Tin Mining District, 1882.

(13.) On the Tin Mines of Herberton, Western, and Thompson's Creek Districts, and the Silver Mines of the Dry River, 1883.

(14.) First Sketch of a Geological Map of the Hodgkinson Goldfield, 1883.

(15). Progress Report of the Government Geologist for the Year 1883; in Annual Report of the Department of Mines for 1883 (1884).

(16.) On the Hodgkinson Goldfield, 1884.

(17.) On the Mount Morgan Gold Deposits, 1884.

(18.) On the Gold Deposits of Mount Leyshon, 1885.

(19.) Progress Report of the Government Geologist for the Year 1884; in Annual Report of the Department of Mines for 1884 (1885).

(19*a*.) On the Proposed Deep Bore for Artesian Water in the Western Interior, 1885.

(22.) Progress Report of the Government Geologist for the Year 1885; in Annual Report of the Department of Mines for 1885 (1886).

(26.) On the Argentine (Star) Silver Mines, Kennedy District, 1886.

(30.) Geological Map of Queensland on the scale of 32 miles to an inch, 1886.

(31.) Handbook of Queensland Geology, 1886.

(32.) Annual Report of the Government Geologist for the Year 1886; in Annual Report of the Department of Mines for 1886 (1887).

(35.) Geological Observations in the North of Queensland, 1886-7.

(37.) On Mineral Lease 276, Watsonville, 1887.

(39.) On the Geological Features of the Mackay District, 1887.

(41.) Annual Progress Report of the Government Geologist for the Year 1887, in Annual Report of the Department of Mines for 1887 (1888).

(44.) Coal Discoveries on the Flinders, 1888.

(45.) On the Geology of the Russel River, 1888.

(46.) On the Limestone District, part of the Palmer Goldfield, 1888 (1889).

(47.) Second Report on the Mount Morgan Gold Deposits, 1888 (1889).

(48.) The Mineral Wealth of Queensland, 1888.

(49.) Annual Progress Report of the Geological Survey for the Year 1888 (1889).

(50). On the Taranganba Gold Mine, 1889.

(55.) On Geological Specimens from New Guinea. R.L.J. and A. W. Clarke, 1889.

(57.) On the Sellheim River Mines and surrounding District, 1889.

(58.) Annual Progress Report of the Geological Survey, 1889 (1890).

(61.) On the Proposed Boring for Artesian Water on the Etheridge and Croydon Goldfields, 1890.

(62.) On the Proposal to Bore for Artesian Water at Normanton, 1890.

(65.) On the Proposed Boring for Water at Brisbane, 1890.

(66.) On the Tin Mines near Cooktown, 1891.

(69.) On the Chillagoe and Koorboora Mining Districts, 1890 (1891).

(74.) Notes on Broken Hill (N.S.W.), 1891.

(77.) Annual Progress Report of the Geological Survey for the Year 1890.

(78.) On the Moondilla Goldfield, 1891.

(81.) On the Sapphire Deposits and Gold and Silver Mines near Withersfield, 1892.

(82.) On the Kangaroo Hills Silver and Tin Mines, 1892.

(83.) Third Report on the Mount Morgan Gold Deposits, 1892.

(87.) Annual Progress Report of the Geological Survey for the Year 1891 (1892).

(88.) Second Report on the Normanby Goldfield, 1893.

(89.) On the Russell River Goldfield, 1893.

(90.) Geological Map of Queensland on the scale of 16 miles to an inch, 1892.

(92.) Geology and Palaeontology of Queensland and New Guinea, 1892.

(93.) On the Grass-tree Goldfield, 1893.

Geological Survey Publications—*continued:*

(94.) Annual Progress Report of the Geological Survey for the Year 1892 (1893).

(95.) Geological Map of Charters Towers Goldfield on the scale of 4 chains to an inch.

(98.) Annual Progress Report of the Geological Survey for the Year 1893 (1894).

(101.) Bulletin No. 1. Artesian Water in the Western Interior of Queensland, 1895.

(103.) Annual Progress Report of the Geological Survey for the Year 1894 (1895).

(106.) Coal near Cooktown, 1895.

(108.) Annual Progress Report of the Geological Survey for the Year 1895 (1896).

(109.) Geological Sketch Map of the Desert Sandstone Tableland between the Palmer and Mossman Waters, 1896.

(110.) Map of the Palmer Districts, in two Sheets, 1896.

(111.) Map showing Reefs in the neighbourhood of Maytown, Palmer Goldfield, 1896.

(114.) Notes on Two Traverses to the Bunya Bunya Range, and a visit to the Brovinia Goldfield, 1896.

(116.) On the Hodgkinson Goldfield (Reprint of No. 16).

(117.) Bulletin No. 4. Notes on the Present Condition of the Hodgkinson Goldfield, 1896.

(123.) Bulletin No. 5. Notes on the Palmer as a Reefing District, 1897.

(125.) Bulletin No. 6. Catalogue of the Exhibits in the Queensland Mining Court, Queensland International Exhibition, 1897.

(132.) On Mount Morgan and other Mines in the Crocodile Goldfield, 1898.

(134.) Bulletin No. 9. On the Chillagoe District and Projected Railway, 1898.

(136.) Bulletin No. 10. Six Reports on the Geological Features of part of the Districts to be traversed by the Transcontinental Railway. Reprint of No. 10.

(142.) Geological Map of Charters Towers Goldfield showing underground workings. On a scale of 4 chains to an inch (1898).

(143.) Annual Progress Report of the Geological Survey for the Years 1896-8 (1899).

(144.) On a visit to the Palmer Goldfield, 1899.

(145.) Geological Map of Queensland on the scale of 16 miles to an inch, 1899. Second Edition.

QUEENSLAND GOVERNMENT MINING JOURNAL—

On Scottish Gympie Gold Mines. In vol. 6, pp. 21-24 (1905).

On O.K. Copper Mine, North Queensland. In vol. 8, pp. 16-19 (1907).

On Cannindah South Copper Mines. In vol. 8, p. 315 (1907).

SUPPLEMENTARY REPORTS. *See* List *under* separate heading. Nos. 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 23, 24, 26, 27, 28, 29, 30, 31, 32, 45, 46, 47, 48, 55, 56, 57, 61, 62, 63, 64, 68, 69.

Jack's Creek. Runs into Bowen R., 55 miles S.byW. of Bowen. *Min.Ref.* Copper carbonate, *see* 1946; Gypsum, 4625; Limestone, 650.

—— —— (low ridge E. of), Bowen R. *Min.Ref.* Copper carbonate, *see* 1947; Gypsum, 4626.

—— ——, N.W. of Charters Towers. *Min.Ref.* Copper Pyrites, *see* 2242A; Galena, 2956.

—— ——, trib. of Burke R., Cloncurry. *Min.Ref.* Bornite, *see* 420; Calcite, 492; Copper Pyrites, 2199; Epsomite, 2614; Limonite, 5860-5861; Malachite, 6255A-6258; Redruthite, 7285; Tetrahedrite, 7769; Tile Ore, 2552.

—— ——, 95 miles W. of Townsville. *Min.Ref.* Cassiterite, *see* 1150.

—— Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4301; Ironstone, 5618.

Jackeroo Creek, br. of Upper Annan R., Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 789.

Jackson (C. F. V.), B.E.

Geological Survey Publications—

169. On some Mines and Mineral Deposits at the Heads of the Brisbane, Burnett and Mary Rivers (1901)

175. Annual Progress Report for the Year 1901 (1902).

177. On the Opal-mining Industry and the Distribution of Opal Deposits in Queensland (1902).

180. On a Visit to the West Coast of Cape York Peninsula and some Islands of the Gulf of Carpentaria; also Reports on the Horn Island and Possession Island Goldfields, and the Recent Prospecting of the Cretaceous Coals of the Cook District (1902)

Queensland Government Mining Journal—

On Coal at Bringabilly Cr., Par. of Mingimarny. In vol. 3, p. 562 (1902).
On Gold and Copper Ores, Mt. Hector. In vol. 4, p. 174 (1903).
Howard Collieries. Report on their Ventilation. In vol. 6, p. 200 (1905).
Notes on Ollera Cr. Wolfram Field. In vol. 6, p. 486 (1905)
State-owned Batteries, Charters Towers. Proposals and Suggestions. In vol. 6, p. 569 (1905).
On Coal and other Mines in the Central District. In vol. 6, p. 654 (1905).
On Croydon and Etheridge Goldfields. In vol. 7, pp. 587, 588 (1906).
On Herberton and Chillagoe Districts. In vol. 7, pp. 583-587 (1906).
Mt. Perry District. Vol. 12, p. 455 (1911).
Mt. Mulligan Coal. Vol. 13, p. 7 (1912).
Proposed Malbon-Macgregor Railway. In vol. 13, p. 13 (1912).

Supplementary Reports. *See* List *under* separate heading. Nos. 106, 107.

Jackson's Antimony Mine, Woodville. *Min.Ref.* Stibnite, *see* 7625a.

—— Bore. *See under* Artesian Bores. No. 135.

—— Cr., 40 miles W.byN. of Pentland Rail. Stn., N.Q. *Min.Ref.* Gold (alluvial), *see* 3191.

—— Gully, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3211.

Jackton Bore. *See under* Artesian Bores. No. 306.

Jacky's Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 278.

—— Waterhole Sub-artesian Bore. *See under* Artesian Bores. No. 118.

Jacob's Knob, Bompa Goldfield. *Min.Ref.* Gold, *see* 4247.

Jacobsen's Mine, Northcote, Hodgkinson. *Min.Ref.* Stibnite, *see* 7620.

Jacondol Bores. *See under* Artesian Bores. No. 155.

Jam Cr. Bore. *See under* Artesian Bores. No. 229.

Jamie Hill, Lilymere Lagoon, Alton Downs, nr. Rockhampton. *Min.Ref.* Coal, *see* 1792.

Jamieson's Sel. (36), Wonga Wallon Cr., S.E. of Brisbane. *Min.Ref.* Gold, *see* 4228; Limonite, 5904; Ironstone, 5615; Manganese-dioxide, 6457.

Janesland Bore. *See under* Artesian Bores. No. 178.

Jardine Co. Cook Dist. *See map*, Pl. 8.

—— Valley, S.W.byW. of Townsville. *Min.Ref.* Opal (common), *see* 6969.

Jargoon. *Var. of* Zircon, *which see.*

Jasp-opal. *See* Opal.

Jasper. *Compo.*, Impure cryptocrystalline quartz. *Colour*, red, brown, yellow, green, black. Opaque. *H.* = 7. *Sp.gr.* = 2·5-2·8. *Varieties*, Egyptian Jasper, Iron Jasper, Lydianstone (Black Jasper or Touchstone), Porcellanite, Red, Brown, and Green Jasper.

Geological Note: Large deposits of bright red Jasper exists at Eel and Pie Creeks to the south and south-west of Gympie. They have not been examined in detail, but are associated with extensive deposits of manganese.

5635. ——. *Assoc.with* Iron Pyrites, Limonite, and Chalcedony. *Loc.* Dreadnought M.L. (452), (Mt. Metallic Group), Prospector Cr., Leichhardt R., 52 miles W.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, p. 299 (1908).

5636. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Calcite, in slate, gossan, and quartz. *Loc.* Queenslander M.L. (436), (Mt. Metallic Group), Prospector Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 297, 298 (1908).

5637. ——. In basaltic soil. *Loc.* P.P. 1, Wetherton (Gayndah line), 79 miles (by rail) W. of Maryborough. *Co.* Mackenzie; *Dist.* **Burnett.** *Ref.* L.C.B.

5638. ——. *Assoc.with* Gold, Malachite, and Chrysocolla, in quartz reef. *Loc.* F. Achilles Mine, Brovinia Goldfield, nr. Hawkwood, 50 miles S.W. of Gayndah Rail. Stn. *Co.* Newcastle (*ante*). *Ref.* G.S.Q. Pub. 114, p. 3 (1896), and G.S.M.

5639. ——. Mt. McGann Range, 5 miles N.N.E. of Thornborough, Hodgkinson Goldfield. *Co.* Dagmar; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 16, p. 4 (1885).

5640. ——. *Loc.* Mt. Robert Range, 5 miles S.S.E. of Thornborough, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 4 (1885).

5640A.——. *Assoc.with* Copper Pyrites, Bornite, Redruthite, Malachite, Azurite, Hematite, and Cinnabar, in quartz and calcite. *Loc.* St. George Copper and Coal Mines, Little R., 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mosman; *Dist.* Cook. *Ref.* G.S.Q. Pub. 222, pp. 21-32 (1910).

5641. ——. *Assoc.with* Serpentine. *Loc.* Cherry Gully, Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.M.

5642. ——. In the conglomerate. *Loc.* Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns-Herberton line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

5642A.——. *Assoc.with* Gold, Chalcedony, Lydianstone, Zircon, and Sapphire, in alluvial deposits. *Loc.* Por. 14v, Bunerba, ½-mile S. of Don R., about 39 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* Q.G.M.J., vol. 5, pp. 610-611 (1904).

5643. ——. *Assoc.with* Gold, Ilmenite, Magnetite, Rutile, Sapphire, Diamond, Spinel, Amethyst, Garnet, Zircon, Cairngorm, Chalcedony, Topaz, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Crs., Anakie Sapphire Field. *Cos.* Clermont and Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pubs. 81 (1892), p. 125 (1897), 172 (1902).

5644.——. In basalt country. Lord's Tableland, 28 miles N.E. of Clermont. *Co.* Clermont (*ante*). *Ref.* G.S.M.

5645. ——. Minerva Cr., Springsure, 206 miles (by rail) W.S.W. of Rockhampton. *Co.* Denison; *Dist.* Leichhardt.

5646. ——. Williams's Hill, Por. 91, Kholo, 7 miles N. of Ipswich. *Co.* Stanley; *Dist.* Moreton. *Ref.* L.C.B.

5647. —— (mammillated). Mt. Hay, 1½ mile S. of Wycarbah Rail. Stn. (Central line), about 25½ miles (by rail and road) S.W.byS. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* Q.M.

5648. ——. Stewart's Cr., trib. of Neerkool Cr., 1 to 3 miles W.N.W. of Stanwell Rail. Stn. (Central line), 16 to 20 miles (by rail and road) SW.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pubs. 131, p. 21 (1898), 149, p. 9 (1900).

5649. ——. *Assoc.with* Iron Pyrites, in diabase. *Loc.* New Dawn Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane (North Coast line). *Co.* March; *Dist.* **Wide Bay.** *Ref.* L.C.B.

5650. —— (brown and red). Por. 1033, Walla, Gin Gin, 29 miles (by rail) W. of Bundaberg (Bundaberg-Mt. Perry line). *Co.* Bowen; *Dist.* Wide Bay. *Ref.* L.C.B.

5651. —— **Egyptian.** *Loc.* On Coomooboolaroo Road, nr. Duaringa Rail. Stn. (Central line), 65 miles (by rail) W.S.W. of Rockhampton. *Co.* Kimberley; *Dist.* Leichhardt. *Ref.* G.S.M.

5652. —— (greenish). Elbow Valley, nr. Warwick (Main line), 169 miles (by rail) S.W. of Brisbane. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* O.R.

5653. —— (green). Kilkivan, 48 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.M.

5654. ——. **Iron Jasper** (*var.*) Springsure, 206 miles (by rail) W.S.W. of Rockhampton (Central line). *Co.* Dennison; *Dist.* Leichhardt. *Ref.* G.S.M.

5654A——. **Lydianstone** (*var.*). *Assoc.with* Gold, Chalcedony, Jasper, Zircon, and Sapphire, in alluvial deposits. *Loc.* Por. 14v, Bunerba, ½-mile S. of Don R., about 39 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* Q.G.M.J., vol. 5, pp. 610, 611 (1904).

5654B. Jasper (Lydianstone). As loose pebbles and boulders in basaltic soil. *Assoc.with* Magnesite, Agate, Chalcedony, and Rock Crystal. *Loc.* Magenta Stn., 8 miles E. of Capella Rail. Stn. *Co.* Talbot; *Dist.* Leichhardt. *Ref.* B.D.

5655. —— ——. Buderim Mts., about 7 miles E.N.E. of Palmwoods Rail. Stn. (North Coast line). *Co.* Canning; *Dist.* Moreton. *Ref.* W.H.G.

5656. —— ——. Brown's Plains (South Coast line), 13 miles S. of Brisbane. *Co.* Stanley; *Dist.* Moreton.

5657. —— ——. Cooper's Plains Rail. Stn. (South Coast line), 8 miles S.E.byS. of Brisbane. *Co.* Stanley (*ante*).

5658. —— ——. *Loc.* Stewart's Cr., etc., 1 to 3 miles W.N.W. of Stanwell Rail. Stn. (Central line), 16 to 20 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

5659.—— ——. *Loc.* Kilkivan Rail. Stn., 48 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* O.R.

5660. ——. **Porcellanite** (*var.*). Fifteen miles from Floraville, Leichhardt R., 40 miles S.S.E. of Burketown. *Co.* Burke; *Dist.* Burke. *Ref.* G.S.M.

5660A.—— ——. Dismal Cr., Canobie Run, about 84 miles N. of Cloncurry. *Co.* Canobie; *Dist.* Burke. *Ref.* G.S.M.

5661. —— ——. *Loc.* Nr. Normanton, W. Coast of Cape York Peninsula, 48 miles S.E. of mouth of Norman R. *Co.* Norman; *Dist.* Burke. *Ref.* Q.M.

5661A.—— ——. *Assoc.with* Malachite, Azurite, and Limonite, in gossan in granite and slate. *Loc.* Eastern Sel. M.F. (2755), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, p. 23 (1910).

5662. —— ——. *Loc.* Mt. Hay, 1½ mile S. of Wycarbah Rail. Stn. (Central line), 25½ miles (by rail and road) S.W.byS. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

5663. —— (red). *Loc.* Mt. Perry Rail. Stn., 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.M.

5663A.—— ——. *Loc.* Diamantina. *Dist.* Gregory North. *Ref.* Q.M.

5664. —— ——. Peak Vale Stn., 18 miles S.S.W. of Clermont (Central line). *Co.* Clermont; *Dist.* Leichhardt.

5665. —— ——. *Assoc.with* Copper Ores. *Loc.* Gt. Fitzroy Copper Mine, Mt. Chalmers, 4 miles N.W. of New Zealand Gully Rail. Stn., 19 miles (by rail and road) N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 216 (1907).

5666. —— ——. *Assoc.with* Serpentine. *Loc.* Mt. Warminster, nr. Mt. Chalmers, 20 miles (by rail) N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* B.D.

5667. —— ——. In alluvial deposit below basalt. *Loc.* Cameron's Lookout, Mt. Rainbow, 42 miles S.S.W. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.M.

Jeanette Mine, Gilberton. *Min.Ref.* Gold, *see* 3830.

Jellinbah Coal Mines, Mackenzie R., 22 miles N.byW. of Blackwater Rail. Stn. (Central line). Coal discovered here in 1868. *See maps,* Pls. 10, 11, 33. *Min.Ref.* Coal, *see* 1696.

GEOLOGICAL NOTE: *See under* Mammoth Coal Mines.

Jenkin's Paddock (in well), Alton Downs. *Min.Ref.* Coal, *see* 1793.

Jenny Downs Bore. *See under* Artesian Bores. No. 444.

—— Lind Reef, Twelve-mile, Croydon Goldfield. *Min.Ref.* Cerussite, *see* 1188A; Galena, 2711B; Gold, 3553.

Jenolan Reef, Lane's Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3715.

Jericho Bores. *See under* Artesian Bores. Nos. 28, 67, 229, 301.

Jersey Bore. *See under* Artesian Bores. No. 141

Jessie M.L. (238), Cloncurry). *Min.Ref.* Hematite, *see* 4684; Limonite, 5764; Malachite, 6119.

Jessie's Dream Copper Lease (397. M.L.). Leichhardt R., Cloncurry. *Min. Ref.* Copper (native), *see* 1985A; Cuprite, 2411B.

Jessop's Gully, Ravenswood Goldfield. *Min.Ref.* Gold (alluvial), *see* 3264.

Jessop's Hill Reefs, 4 miles N. of Maytown, Palmer Goldfield. *Include* Trieste, Sunburst, Last Chance, General Sarsfield, St. Patrick, Downpatrick, Prince Patrick, and Difficulty Reefs. *Min.Ref.* Gold, *see* 3670-3672.

Jester Tin Mine, Irvinebank. *Min.Ref.* Cassiterite, *see* 865; Kaolin, 5676.

Jibbinbar Silver Lodes, 20½ miles S.byW. of Stanthorpe. *Lat.*, 28° 47′ S.; *Long.*, 151° 38′ E. *Min.Ref.* Copper Pyrites, *see* 2181-2183; Galena, 2829-2831; Gold, 3832-3833A; Iron Pyrites, 5105-5107; Malachite, 6249; Minium, 6593; Mispickel, 6709-6716; Silver, 7469-7472; Zinc Blende, 8095-8097. *See also* Supplementary Report List, No. 31.

Geological Note: The country rocks are granite and slate. Lodes in the granite are of quartz and ' formation," and contain silver in association with mispickel. Lodes in the slate consist of slugs of mineral in quartz, the mineral being made up of silver with mispickel, galena, zinc blende, and copper pyrites. *See* G.S.Q. Pubs. No. 58 and 67 for notes.

—— —— Mine, Jibbinbar. *Min.Ref.* Galena, *see* 2829A; Iron Pyrites, 5106; Mispickel, 6711; Silver, 7471; Zinc Blende, 8096.

Jillett Bros.' Bore. *See under* Artesian Bores. No. 280.

Jimbour, 14 miles N.E. of Macalister Rail. Stn. (Western line). *Lat.*, 27° S.; *Long.*, 151° 13′ E. *See maps*, Pls. 12, 13. *Min.Ref.* Rutile, *see* 7323B.

Geological Note: Coal Measures of Walloon Formation (Trias-Jura) prevail throughout the neighbourhood, and are said to contain small but good seams of coal. Alluvial deposits and basalt occur in depressions in the Coal Measures, the former containing fossil bones. *See* G.S.Q. Pub. No. 212 for map.

Jimbour. Par. of (Por. 9A). Coal, *see* 1622.

—— Bores. *See under* Artesian Bores. Nos. 94, 175, 240.

—— Head Stn., 12 miles N.E. of Macalister Rail. Stn. *Min.Ref.* Coal, *see* 1625. *Also*, Supplementary Report List, No. 115.

Jimna Goldfield. *See* Yabba Goldfield.

Johannsen's Caves, Mt. Etna, 16 miles N.byW. of Rockhampton. *Min.Ref.* Actinolite, *see* 4867; Guano, 4612; Limestone, 684. *See* Geological Note *under* Olsen's Caves.

Johannesburg (Lord Roberts) Reef, Hamilton Goldfield. *Min.Ref.* Galena, *see* 2741A; Gold, 3705; Iron Pyrites, 5031.

John Bull Gold Reef, Calliope Goldfield. *Min.Ref.* Gold, *see* 4258; Iron Pyrites, 5363.

—— —— —— Block, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2941; Gold, 4037; Iron Pyrites, 5253; Zinc Blende, 8149

—— —— Silver Mine, Star R. Mineral Field. *Min.Ref.* Cerussite, *see* 1270; Galena, 2986; Ironstone, 5575; Massicot, 6542; Minium, 6615.

—— —— —— ——, Dry R., S.S.W. of Herberton. *Min.Ref.* Anglesite, *see* 39; Chalcanthite, 1328; Galena, 2851; Linarite, 5938; Massicot, 6534; Minium, 6596.

—— —— Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1045.

—— Downie Copper Lode, Cattle Cr., W.S.W. of Mackay. *Min.Ref.* Azurite, *see* 229A; Malachite, 6325A.

Johnson and Smith's Claim, Dargalong. *Min.Ref.* Cerussite, *see* 1198; Copper carbonate, 1893; Minium, 6585.

Johnson's Sel., 20v., 5 miles S.W. of Rathdowney Stn., Beaudesert Tramline. *Min.Ref.* Coal, *see* 1790A.

Johnstone River, Geraldton. *Min.Ref.* Beach Sand, *see* 287; Magnetite, 5995; Monazite, 6878; Tantalum, 7697.

Geological Note: The rocks in this locality consists of slates and quartzites (of undertermined age), and basalt. *See* G.S.Q. Pub. No. 97 for note.

—— and Party's Tin Mine, Rossville, Annan R. Tinfield *Min.Ref.* Cassiterite, *see* 822.

Jones (D. M.), Warden—

On Anakie Sapphire Fields. Q.G.M.J., vol. 5, p. 347 (1904).

Jones's Cr. Heads at the Collingwood Range, and flows N into Wallaby Cr., br. of Annan R., 25 miles S. of Cooktown. *Min.Ref.* Cassiterite, *see* 781-788, 823; Iron Pyrites, 5024; Mispickel, 6666, 6670, 6671; Tourmaline, 7839, 7844.

—— Quarry, nr. Rosedale Rail. Stn. (North Coast line). *Min.Ref.* Limestone, *see* 680; Marble, 595.

—— Sel. (139), Argentine Silver Field. *Min.Ref.* Cerussite, *see* 1271; Ironstone, 5576; Minium, 6616.

—— —— (131), Tanyalba Cr., S.S.W. of Tiaro. *Min.Ref.* Coal, *see* 1820.

Jordan Cr. Goldfield—

SITUATION: *See maps,* Pls. 8, 9, 22. Twenty-two miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. Centre about *Lat.* 17° 42′ S.; *Long.* 146° E. Discovered in 1898.

POPULATION: 12 (estimated, 1912).

PROCLAMATION: First gazetted, 22nd July, 1898; last, 28th August, 1900, as follows:—Commencing on the left bank of the north branch of the Johnstone River at a point bearing north from the intersection of Wadda Cr. with the Geraldton to Herberton road, and bounded thence on the east by a line bearing south to that intersection; thence by Wadda Cr. upwards southerly to the ridge forming its watershed from the south branch of the Johnstone River, by that ridge westerly to that south branch, by the south branch of the Johnstone River upwards westerly to its head in the Coast Range, by that range northerly to a point west from the confluence of Beatrice River with the north branch of the Johnstone River, by a line east to that confluence; and thence by the north branch of the Johnstone River downwards easterly to the point of commencement.

AREA: 40,960 acres (64 sq. miles).

LEASES: Two goldmining leases in forces; area, 50 acres (1912).

PRINCIPAL MINING CENTRES: Bora Ground, Moochoopa, Wingananie. *Include* Beatrice and Little Beatrice Rivers, Douglas, Jordan, Lemon's, and Spring Creeks; Bola, Fairbank, Golden, Henrietta, Joyce's, Macintosh, Nuggety, Poverty, and Spring Gullies.

MINERAL STATISTICS: *Included in* "Other Goldfields." *See tables and diagrams,* Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: Gold (alluvial), 3219, 3220, (reef) 3768-3772; Iron (Mispickel) 6705, (Ilmenite) 4893, (Iron Pyrites) 5078; Rutile, 7329. Other Minerals—Corundum, 2367; Garnet, 3113, 3114, 3160, 3163; Hyacinth, 8229; Pleonaste, 7586, 7587; Ruby, 2360; Sapphire, 2341-2343; Spinel, 7576; Topaz, 7789; Tourmaline, 7856; Zircon, 8220.

GEOLOGICAL NOTE: The rocks of the Jordan Goldfield are principally granite and basalt, the former being the old land surface weathered into hills and valleys, the latter a volcanic flow partly covering the granite. Reefs exist in the granite, but are generally small, although associated with a gold-bearing formation in which the gold occurs in shoots. About six lines of reef have been opened up, but other unprospected reefs are known.

GEOLOGICAL PUBLICATIONS: Report—No. 157 (1901). *See* Geol. Surv. Pub. List for title.

WARDEN: Stationed at Geraldton. INSPECTOR OF MINES: Stationed at Herberton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— Gold Mine, Jordan Goldfield. *Min.Ref.* Gold, *see* 3770; Iron Pyrites, 5078.

—— Gully, Jordan Goldfield. *Min.Ref.* Gold (alluvial), *see* 3219, 3220, (reef) 3771; Mispickel, 6705; Pleonaste, 7586, 7587; Ruby, 2360; Sapphire, 2342, 2343; Spinel, 7576.

—— P.C., Jordan Gully, Jordan Goldfield. *Min.Ref.* Gold, *see* 3771; Mispickel, 6705.

Jondaryan Bores. *See under* Artesian Bores. No. 302.

Jondowaie Sub-artesian Bores. *See under* Artesian Bores. Nos. 29, 120.

Josëite. *Compo.*, Telluride of bismuth. *Colour*, steel-grey. Sub-metallic, micaceous. *H.* = 1-1·2. *Sp.gr.* = 7·9. *Contents* (*max.*), Bismuth 81 per cent.

5668. ——. *Assoc.with* Nat. Bismuth, Bismuthinite, Copper Pyrites, Zinc Blende, in calcite veins, in breccia, mudrock, diorite, and felsite. *Loc.* Mt. Shamrock Mine, 2½ miles N. of Chowey Rail. Siding, and 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* **Burnett.** *Analyses:* Bismuth, 82·8 per cent.; Tellurium, 10·8 per cent.; Gold, 1½ oz. per ton; Silver, 1 oz. per ton. *Ref.* G.S.Q. Pubs. 60, p. 6 (1890), 125 (1897), 168 (1901), and B.D.

5668A.——. *Assoc.with* Native Bismuth, Bismuthinite, and Native Gold. *Loc.* International Mine, nr. Mt. Havilah, 5 miles S.W. of Biggenden Rail. Stn. *Ref.* R.G.

Joseph Morris Mine, Gilberton. *Min.Ref.* Gold, *see* 3830.

Joss's Rush, Eureka Cr., nr. Stannary Hills Rail. Stn. *Min.Ref.* Cassiterite, *see* 851.

Joyce's Gully, Jordan Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

J.R.D. Reef, Hillsborough (8-Mile), Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2925; Gold, 4012; Iron Pyrites, 5236A.

Juan Bore. *See under* Artesian Bores. No. 151.

Jubilee Bore. *See under* Artesian Bores. No. 173.

Jubilee Group of Mines, Corella R., Cloncurry. *Include* Jubilee, Printy, Sunflower, and Mountaineer Mineral Leases. *Min.Ref.* Copper Ore, *see* 2016B.

—— Copper M.L. (460) (*ante*). *Min.Ref.* Copper Ore, *see* 2016B.

—— Gold Mine, Rannes Goldfield. *Min.Ref.* Gold, *see* 4184.

—— Reef, Twelve Mile, Croydon Goldfield. *Min.Ref.* Galena, *see* 2711C; Gold, 3555.

—— ——, Enoggera Goldfield. *Min.Ref.* Gold, *see* 4214.

—— ——, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3724A.

—— ——, Morinish Goldfield. *Min.Ref.* Copper Pyrites, *see* 2296A; Gold, 4334.

Julia Creek, 2 miles S.E. of Mungana Rail. Stn. (Chillagoe line). *Min.Ref.* Azurite, *see* 194A; Copper (native), 1992; Cuprite, 2439; Hematite, 4717; Malachite, 6237; Manganese-dioxide, 6410; Selenite, 4639; Tetrahedrite, 7765.

—— —— Bores. *See under* Artesian Bores. Nos. 78, 255, 452.

Jumbo Reef, Carron, Croydon Goldfield. *Min.Ref.* Galena, *see* 2697A; Gold, 3479.

Jumna Creek, Jimbour. *Min.Ref.* Rutile, *see* 7323B.

Jump-up Claim, Herberton Road, S.S.W. of Atherton. *Min.Ref.* Apophyllite, *see* 84.

Junction Cr. Telegraph Stn., Junction Cr., br. of Einasleigh R. *Min.Ref.* Bismuth, *see* 320; Cerussite, 1215; Copper carbonate, 1899; Muscovite, 6891; Redruthite, 7281; Wolfram, 7981.

—— —— —— —— (35 miles S. of). *Min.Ref.* Tripolite, *see* 7025.

—— P.C., Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4101; Silver, 7495.

——, and Junction S. Tin Leases (180, 181), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1243, 1244; Copper carbonate, 1928, 1929; Ironstone, 5559, 5560.

—— Extd. Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1046.

Jundah Opal Field. *Includes* Old Field (Top Flat) and Black Mine.

SITUATION: *See maps*, Pls. 18, 19. 130 miles S.W. of Longreach, Opalton Mineral Field. Centre about *Lat.* 24° 42′; *Long.* 142° 46′.

DISCOVERY: Before 1888.

MINERAL STATISTICS: *See under* Opalton.

MINERAL REFERENCE: Opal (precious and common) *see* 6953.

GEOLOGICAL NOTE: "Desert Sandstone" is the prevailing Formation, which rests on "Rolling Downs" Formation. Opal occurs in the former, usually in ferruginous pipes which are supposed to have once been tree trunks. *See* G.S.Q. Pub. No. 177 for details.

GEOLOGICAL PUBLICATIONS: Report—No. 177 (1902). *See* Geol. Surv. Pub. List for title.

WARDEN: Duties carried out by officer stationed either at Longreach or Winton.

INSPECTOR OF MINES: Stationed at Rockhampton.

Just-in-Time Group of Copper Mines, Malbon, Cloncurry. *Include* Adelaide, Just-in-Time, No. 1 and 2 East, No Doubt, and West M. Leases, and Tower Boys Extd. Claim. *Min.Ref.* Copper Pyrites, *see* 2087A; Cuprite, 2403-2405; Limonite, 5772-5775; Malachite, 6130-6134; Redruthite, 7234-7236; Tetrahedrite, 7757; Tile Ore, 2516-2518.

—— —— M.L. (237), Cloncurry. *Min.Ref.* Limonite, *see* 5773; Malachite, 6131; Redruthite, 7234; Tile Ore, 2517.

—— —— 1 E. M.L. (473), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2087A; Limonite, 5774; Malachite, 6132; Redruthite, 7235.

—— —— Mine, Terraces, Russell Goldfield. *Min.Ref.* Opal (wood), *see* 7003.

—— —— Reef, Pentland, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4053.

—— —— ——, Charters Towers Goldfield. *Min.Ref.* Gold, Galena, Iron Pyrites, *see* 3957.

—— —— ——, Northcote, Hodgkinson Goldfield. *Min.Ref.* Galena, *see* 2761; Gold, 3757; Iron Pyrites, 5058; Mispickel, 6684.

—— —— —— (Now Faith), Normanby Goldfield. *Min.Ref.* Copper carbonate, *see* 1941; Gold, 4124, 4139; Copper Pyrites, 2257; Mispickel, 6761; Siderite, 7412; Iron Pyrites, 5303.

—— —— ——, Palmer Goldfield. *Min.Ref.* Gold, *see* 3680.

—— —— ——, W. of Mt. Gammie, Thane's Cr. Goldfield. Discovered in 1880 by Messrs. Parfitt and Adams. *Min.Ref.* Gold, *see* 3867; Ironstone, 5543.

—— —— ——, Ulam Goldfield. *Min.Ref.* Galena, *see* 3054; Gold, 4302; Iron Pyrites, 5393.

—— —— Tin Mine, Ragged Cr., 7 miles S. of Montalbion. *Min.Ref.* Cassiterite, *see* 877; Chlorite, 1434; Mica, 6556; Rock Crystal, 7185.

Kabonga Mine, Kilkivan Goldfield. *Min.Ref.* Bismuthinite, *see* 376; Copper Pyrites, 2326; Cuprite, 2483; Gold, 4401; Iron Pyrites, 5448; Limonite, 5924; Magnetite, 6063; Malachite, 6380; Redruthite, 7308; Tile Ore, 2571.

—— and Splinter Creeks (between), Mt. Cannindah. *Min.Ref.* Limestone, *see* 629.

Kabra, 11 miles (by rail) S.W. of Rockhampton. *Min.Ref.* Hematite, *see* 4790; Magnetite, 6047.

GEOLOGICAL NOTE: The rocks consist of shales, limestones, etc., of Gympie Formation (Permo-Carboniferous) in contact with granite. *See* G.S.Q. Pub. 131 for details.

Kaffir Chief Mine, Pikedale Goldfield. Discovered about 1878. *Min.Ref.* Galena, *see* 2832; Gold, 3834; Iron Pyrites, 5111; Mispickel, 6719.

Kahmoo Bore. *See under* Artesian Bores. No. 237.

Kaimkillenburn Sub-artesian Bore. *See under* Artesian Bores. No. 95.

Kairanga Lease (217), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1245; Ironstone, 5561.

Kaiser Bill Copper Mine, 6 miles S.W. of Einasleigh. *Min.Ref.* Copper Ore, *see* 2025C.

Kalara Bore. *See under* Artesian Bores. No. 242.

Kalkie Well Sub-artesian Bore. *See under* Artesian Bores. No. 210.

Kalinite. *Syn.* Potash Alum. *Compo.*, Hyd. sulphate of alumina and potash. *Colour*, white. *H.* = 2-2·5. *Sp.gr.* 1·75. *Contents* (*max.*), Potash 10 per cent.

5669. ——. In shales. Parrot and Cockatoo Crs., Bowen R., 60 miles S.S.W. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 4, pp. 20, 27 (1879).

Kallanda, S.W.byS. of Ingham. *Min.Ref.* Azurite, *see* 217; Cuprite, 2461; Limonite, 5881; Malachite, 6304.

Kalliwa Cr., 4 miles above Burnett R. *Min.Ref.* Ilmenite, *see* 4882; Manganese-dioxide, 6394.

Kamarooka Bore. *See under* Artesian Bores. No. 255.

Kamileroi Co. Burke Dist. *See map*, Pl. 20.

—— Stn., Leichhardt R., Cloncurry. *Lat.*, 19° 27′ S.; *Long.*, 140° E. *Min.Ref.* Magnesian Limestone, *see* 741.

Kanaka Bore. *See under* Artesian Bores. No. 178.

Kandanga Cr. Heads at Main Coast Range, 25 miles S.W. of Gympie, flows E.byN. into Mary R., about 14 miles S. of Gympie. *Min.Ref.* Asbestos (superior), *see* 4872.

Kangaroo Cr., br. of Rosella Cr., S.W.byS. of Bowen. *Min.Ref.* Coal, *see* 1656, 1657.

Kangaroo Hills Mineral Field—

SITUATION: *See maps,* Pls. 16, 17. The township of Ewan is 40 miles S.W. byS. of Ingham. *Cos.* Wairuna and Wilkie Gray; *Dist.* Kennedy North. Centre about *Lat.* 18° 58′ S.; *Long.* 146° 7′ E.

DISCOVERY: Tin was discovered at Running River about 1875.

POPULATION: 207 (estimated 1912). AREA: 423,050 acres (661 sq. miles).

PROCLAMATION: First (and only one) gazetted, 31st May, 1893, as follows:—Commencing at the confluence of the Running River with the Burdekin River, and bounded thence by the Burdekin upwards northerly to the confluence of Douglas Creek, by that creek upwards to its head; thence by a line east to the range forming the southern watershed of the Herbert River, by that range easterly to the eastern boundary of the Waterview Lease, by that boundary north to the road from Ingham to Kangaroo Hills, by that road easterly to a point due west from the north-west corner of portion 244, parish of Waterview, by a line east to that corner, by the west and south boundary of that portion, and by part of the south boundary of portion 400 east to the trial survey of railway line from Townsville to Ingham, by that survey easterly to portion 474, by the west boundary of that portion and a line southerly to the range, by that range to its junction with the Coane Range or southern watershed of the Running River and its tributaries, and by the Coane Range westerly to the Burdekin River, to the point of commencement.

LEASES: Mineral leases in force, 10; area, 100 acres. Miners' homesteads in force, 11; area, 168 acres (1912).

PRINCIPAL MINING CENTRES: Ewan, Kallanda (Waverley), Mt. Brown, Macaulay Cr., Hidden Valley, Mt. Benham, *which see.*

MINERAL STATISTICS:

Tin,	*see tables,*	Pls. 38, 46, 46A.
Silver,	,,	Pls. 37, 46, 46A.
Copper,	,,	Pls. 39, 46, 46A.
Lead,	,,	Pls. 38, 46, 46A.
Wolfram,	,,	Pls. 42, 46, 46A.

MINERAL REFERENCES: Silver (native), 7556, 7557; Lead (Cerussite) 1232-1258, (Galena) 2958-2980, (Linarite) 5939, (Minium) 6599-6602, (Pyromorphite) 7147; Copper (Atacamite) 134, 135, (Azurite) 217-223, (Bornite) 422-429, (Chrysocolla) 1526-1532, (Copper carbonate) 1923-1939, (Copper, native) 2002, (Copper Pyrites) 2243-2249, (Cuprite) 2460-2464, (Malachite) 6298-6310, (Redruthite) 7298, 7299, (Tenorite) 7731, (Tile Ore) 2565, **Tin** (Cassiterite), 1152-1163A; Bismuth (native) 349, (Ore) 354, (Bismutite) 404; Wolfram, 8032, 8032A; Scheelite, 7354; Zinc (Aurichalcite) 149, (Blende) 8156-8162, (Smithsonite) 7570, 7571; Manganese (dioxide) 6434-6444, (Pyrolusite) 7124; Rutile, 7333, 7334; Iron (Hematite) 4745-4752, (Ilmenite) 4899A, (Iron Pyrites) 5279-5281, (Ironstone) 5557-5567, (Lievrite) 5736-5738, (Limonite) 5880-5883, (Magnetite) 6015-6021, (Mispickel) 6751-6755; Limestone, 654. Other Minerals—Beryl, 294; Calcite, 505, 506; Chlorite, 1460; Fluorspar, 2683, 2684A; Garnet, 3126-3130; Gypsum, 4624; Kaolin, 5690; Lithomarge, 5712; Marble, 589; Sapphire, 2354; Steatite, 7692; Topaz, 7804; Tremolite, 4876.

GEOLOGICAL NOTE: The rocks of this field comprise granite, mica schists, talc schists, grits, conglomerates, quartzites, and limestones. The granite surrounds and intrudes the other rocks, while porphyry and felsite also occur as dyke masses in the altered sedimentary strata. Tin lodes exist in the granite, and silver-lead-copper lodes in the altered rocks. *See* G.S.Q. Pubs. Nos. 82 and 167 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 82, 167, 188. *See under* Geol. Surv. Pub. List for title. *See also under* Govt. Mining Jour. Special Reports, No. 65. *Also* List of Maps *under* Department of Mines Publications, *and* Supplementary Report List, No. 113.

WARDEN: Stationed at Ingham. INSPECTOR OF MINES: Stationed at Charters Towers.

REPORTS: (Inspectors' and Wardens') monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

CRUSHING MILLS: Four Batteries (28 stamps).

Kangaroo Hills Tin Freeholds (166 and 198), Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1159; Copper Pyrites, 2245; Galena, 2967.

—— Plains Bore. *See under* Artesian Bores. No. 151.

—— Point Quarries, Brisbane. *Min.Ref.* Rock Crystal, *see* 7196.

Kaolin. *Syn.* Kaolinite, China Clay. *Compo.*, Hyd. silicate of alumina. *Colour*, white, reddish, yellowish. Dull. Earthy. *H.* = 1-2·5. *Sp.gr.* = 2·4-2·6. *Contents* (*max.*), Alumina 39 per cent. *See* Geological Note *under* Clay .

5670. ——. Canobie Stn., 85 miles N.N.E. of Cloncurry. *Co.* Canobie; *Dist.* **Burke.** *Ref.* O.R.

5671. ——. *Assoc.with* Sulphide and Oxidised Iron and Copper Ores, in gossan, slate, and diorite. *Loc.* Hampden M. Leases (244, 245, etc.), Hampden Group, 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 49-60 (1908).

5672. ——. Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn., 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 60, p. 1 (1890).

5673. ——. *Assoc.with* Gold, in quartz. *Loc.* Dykehead Gold Mine, 11 miles from Dykehead Stn., Deloura Cr., Auburn R., 35 miles W.byS. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 207, p. 12 (1907).

5674.——. *Assoc.with* Gold, in quartz. *Loc.* Mt. Rose United Mine, Mt. Rose Reef, Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 43, p. 2 (1887).

5675. ——. Marching-through-Georgia Mine, Maytown, 36 miles S. of Laura Rail. Stn. (Cooktown line), 103 miles (by rail and road) S.byW. of Cooktown. *Co.* Chelmsford; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 4, p. 70 (1881).

5676. ——. *Assoc.with* Cassiterite, in lode. *Loc.* Jester Mine, Irvinebank, 10 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M.

5676A.——. *Assoc.with* Cassiterite. *Loc.* Tornado Tin Mine, Irvinebank (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 70 (1887).

5677. ——. *Assoc.with* Cassiterite. *Loc.* Day Dawn Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M.

5678. ——. *Assoc.with* Cassiterite. *Loc.* Federation Tin Mine, Watsonville (*ante*). *Ref.* G.S.M.

5679. ——. Paisley Mine, Muldiva, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 64 (1900).

5680. ——. Venus P.C., Mt. Surprise, 67 miles S.W. of Almaden Rail. Stn. (Chillagoe line). *Co.* Tate; *Dist.* Cook. *Ref.* O.R.

5681. ——. In dyke 90 feet thick. *Loc.* O.K. Copper Mine, Mitchell R., 40 miles N.N.W. of Mungana Rail. Stn. (Chillagoe line). *Co.* Wrotham; *Dist.* Cook. *Ref.* B.D.

5682. ——. *Loc.* Dolly's Cr., Emu Vale, 16 miles (by rail) E. of Warwick (main line), and 84 miles S.S.E. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* G.S.M.

5682A.—— (large deposit). *Loc.* Pilton, nr. Clifton, 11 miles S.E. of Greenmount Rail. Stn. *Co.* Aubigny (*ante*). *Ref.* O.R. (1910).

5683. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Stanthorpe, 207 miles (by rail) S.W. of Brisbane (main line). *Co.* Bentinck (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 70 (1887).

5684. —— (fine, white). Portions are impregnated with salt. *Loc.* Cork Stn., Diamantina R., 80 miles S.W.byS. of Winton Rail. Stn. (Gt. Northern line). *Co.* Brighton; *Dist.* Gregory North. *Ref.* G.S.M.

5685. ——. Rosebrook, head of Mayne Cr., branch of Diamantina, 117 miles W. of Longreach Rail. Stn. (Central line). *Co.* Rosebrook; *Dist.* Gregory North. *Ref.* G.S.M.

5686. ——. *Assoc.with* Cassiterite. *Loc.* Cosmopolitan Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.**. *Ref.* P.R.S.Q., vol. 4, p. 70 (1887).

5687. ——. *Assoc.with* Cassiterite. *Loc.* Gt. Eastern Tin Mine, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

5688. —— (yellowish). In 20 ft. seam. *Loc.* St. Patrick Mine, Herberton (*ante*). *Ref.* G.S.M.

5689. ——. *Loc.* Mt. Garnet Rail. Stn. and Mines, Return Cr., 136 miles (by rail) S.W. of Cairns (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 64 (1900).

5690. ——. *Assoc.with* Lithomarge, Steatite, Azurite, and Galena, in quartz lode. *Loc.* Hidden Treasure E. Lease (166), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North.

5691. ——. Bowen River, about 50 miles S.W. of Bowen. *Dists.* Kennedy North and South. *Ref.* G.S.M.

5692. ——. Sandy Cr., close to Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* B.D.

5693. ——. In large deposits. *Loc.* Near Duaringa, 65 miles (by rail) W.S.W. of Rockhampton, on Central line. *Co.* Kimberley; *Dist.* Leichhardt. *Ref.* B.D.

5694. ——. In tuffaceous sandstone. *Loc.* Achelow Cr., nr. Maneroo Stn., 24 miles W.byS. of Longreach, on Central line. *Co.* Maneroo; *Dist.* **Mitchell.** *Ref.* O.R.

5695. ——. Bribie Is., 45 miles N. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Ref.* G.S.M.

5696. ——. Mt. Stanley, near Nanango, about 17 miles N. of Benarkin Rail. Stn. (Brisbane-Valley line), 128 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 29, p. 1 (1886).

5696A.——. Boonah, 59 miles (by rail) S.S.W. of Brisbane (Fassifern Br. line), *Co.* Churchill; *Dist.* Moreton. *Part Analysis: See* Table *under* Clay. *Ref.* B.D.

5697. ——. Dinmore Colliery, nr. Dinmore Rail. Stn., Bundamba Coal Area, 21 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Analysis: See* Table *under* Clay. *Ref.* G.S.Q. Pub. 125, p. 59 (1890).

5697A.——. Gympie Road, 3 miles beyond North Pine. *Co* Stanley (*ante*). *Ref.* O.R. (1910).

5698. ——. In large bedded deposits. *Loc.* Mrs. Trouston's Sel., 2½ miles from Kingston Rail. Stn. (South Coast line), 20 miles S.E.byS. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Table *under* Clay. *Ref.* B.D.

5698A.——. Wellington Point, 19 miles (by rail) E.byN. of Brisbane. *Co.* Stanley (*ante*). *Analysis: See* Table *under* Clay. *Ref.* O.R., p. 194 (1909).

5699. ——. *Assoc.with* Gold, as a casing of quartz. *Loc.* Port Alma Reef, Raglan Goldfield, 34 miles (by rail) W.N.W. of Gladstone (North Coast line). *Co.* Deas Thompson; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

5700. ——. Mt. Gordon, 3 miles W. of Wycarbah, 27 miles (by rail and road) S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.M.

5701. ——. Mt. Hay, 1½ mile S. of Wycarbah Rail. Stn. (Central line), 25½ miles (by rail and road) S.W.byS. of Rockhampton. *Co.* Livingstone (*ante*). *Analyses: See* Table *under* Clay. *Ref.* G.S.Q. Pub. 150, pp. 14, 15 (1900).

5702. ——. Taranganba Gold Mine, 1½ mile S. of Yeppoon (Central line), 10 miles (by rail and road) N.E.byN. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 50, p. 1 (1889).

5703. ——. Nr. Wilangi Stn., Styx R., 9 miles S.S.E. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 84, p. 6 (1892).

5704. ——. Callan's Knob, 1 mile W. of Mt. Morgan Rail. Stn., Mt. Morgan (Crocodile) Goldfield. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 70 (1887).

5705. ——. *Assoc.with* Gold, in dykes. *Loc.* Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton, Mt. Morgan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 17, p. 1 (1885).

5706. ——. Near Reserve, Walla, 5 miles S.S.W. of Gin Gin Rail. Stn. (Gayndah line), 34 miles (by rail and road) W.byS. of Bundaberg. *Co.* Bowen; *Dist.* Wide Bay. *Ref.* L.C.B.

5707. ——. **Lithomarge** (*var.*). In large quantities, exposed near road. *Loc.* Half-way between Tabletop and Mulligan's, about 7½ miles N.E. of Croydon. *Co.* Surrey; *Dist.* Burke. *Ref.* B.D.

5708. —— ——. Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. *Ref.* Q.M.

5709. —— ——. *Assoc.with* Malachite and Chrysocolla, in quartzite. *Loc.* McIlwraith Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line). *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 6 (1891).

5710. —— ——. Clifton Colliery, Clifton Rail. Stn. (main line), 42 miles (by rail) due S. of Toowoomba, 145 miles (by rail) W.S.W. of Brisbane. *Co.* Aubigny; *Dist.* Darling Downs. *Ref.* Q.M.

5711. Kaolin (Lithomarge). Pittsworth, 36 miles (by rail) S.W.byW. of Toowoomba (main line). *Co.* Aubigny (*ante*). *Ref.* A.R., p. 144 (1908).

5712. —— ——. *Assoc.with* Kaolin, Steatite, Galena, and Azurite, in quartz lode. *Loc.* Hidden Treasure E. Lease (166), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 7 (1892).

——. *See also under* Clay and Fireclay for other references.

Kaolinite. *See* Kaolin.

Kargoolnah Shire Council Bores. *See under* Artesian Bores. Nos. 125-127.

Kasouka Sub-artesian Bore. *See under* Artesian Bores. No. 333.

Katandra Run Artesian and Sub-artesian Bores. *See under* Artesian Bores. No. 303.

Kate's Bore. *See under* Artesian Bores. No. 420.

Katnook Bore. *See under* Artesian Bores. No. 326.

Kauffman Diggings (Rannes Goldfield). *Loc.* 6 miles S. of Rannes, 45 miles S.S.W. of Mt. Morgan. *Min.Ref.* Gold, *see* 4173.

GEOLOGICAL NOTE: The rocks consist of slates, etc., of Gympie Formation (Permo-Carboniferous), in which there are gold-bearing reefs and intrusive dykes of diorite. The locality has been abandoned for many years. *See* G.S.Q. Pub. No. 155 for notes and maps.

Kaufman's Reef, Fine Gold Cr., Agate Downs Goldfield. *Min.Ref.* Gold, *see* 3466.

Kaut's Silver King Mine, Lawn Hills. *Min.Ref.* Galena, *see* 2695.

Kawataria, Brit. New Guinea. *Min.Ref.* Calcite, *see* 561; Celestine, 1176.

Kearney's Paddock, foot of Constitution Hill, Cawarral Goldfield. *Min.Ref.* Chlorite, *see* 1482.

Keating, Madden & Co.'s Tin Lease, Mt. Amos, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 793; Iron Pyrites, 5023; Tourmaline, 7831.

Kedron Brook, 5 miles N. of Brisbane. *Min.Ref.* Coal, *see* 1770, 1771.

GEOLOGICAL NOTE: The rocks comprise schists belonging to the Devonian System, and sandstones and shales of Ipswich Formation (Trias-Jura), the latter containing thin seams of coal. *See* G.S.Q. Pub. 34 for details and map.

Keelbottom Copper Mine, 21 miles N.W.byN. of Charters Towers. *Min.Ref.* Azurite, *see* 224A; Chrysocolla, 1533; Copper (native), 2004; Malachite, 6316.
—— River (creek W. of) Star R. *Min.Ref.* Cassiterite, *see* 1165.

Keeley and Valentine's Claim, Nuggety Gully, Mt. Britten Goldfield. *Min.Ref.* Calcite, *see* 519; Chlorite, 1462; Gold, 4186; Iron Pyrites, 5329; Ironstone, 5602; Steatite, 7694A.

Keeley's M.F. (2382), Mt. Flora Gold and Mineral Field. *Min.Ref.* Azurite, *see* 235I; Copper Pyrites, 2269D; Iron Pyrites, 5327D; Malachite, 6339L.

Keeroongooloo Run Opal Field. *See maps*, Pls. 18, 19. *Includes* Mascotte, Peppin and Webber's, Gladstone, Gem, and Malone's Mines, *which see.* 56 miles N.W. of Eromanga. *Lat.*, 25° 53′; *Long.*, 142° 44′. *Min.Ref,* Opal (precious), *see* 6945-6946A.

GEOLOGICAL NOTE: *See* Eromanga.

GEOLOGICAL PUBLICATIONS: Report No. 177 (1902). *See* Geol. Surv. List for title.

WARDEN: Stationed at Eromanga or Charleville. INSPECTOR OF MINES: Stationed at Gympie; ASSISTANT-INSPECTOR: Stationed at Ipswich.

Keira Bore. *See under* Artesian Bores. No. 331.

Kellaway's Tin Claim, Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 768.

Kelly's Bores. *See under* Coal Bores.

—— Clay Pit and Brickworks, Tingalpa, nr. Brisbane. *Min.Ref.* Clay, *see* 1578; Coal, 1773. Coal bore to 200 feet—no coal.

—— Gold Mine, Calliope Goldfield. *Min.Ref.* Calcite, *see* 526.

—— Queen Block Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2889; Gold, 3909; Iron Pyrites, 5175.

Kelvin Grove Silver Mines, 32 miles S.S.E. of Mackay. *Min.Ref.* Hematite, *see* 4757.

Kendall Co. Cook Dist. *See map,* Pl. 8.

Kendall's (Coen) River (lower crossing of), N.N.W. of Port Stewart. *Min.Ref.* Garnet (almandine), *see* 3153; Gold (alluvial), 3209.

Kendal Sub-artesian Bore. *See under* Artesian Bores. No. 170.

Kendle and Derry's Reef, Towalla Goldfield. *Min.Ref.* Gold, *see* 3784.

Kenmore Bore. *See under* Artesian Bores. No. 357.

Kennedy Co. *See* Maranoa Dist. *See map,* Pl. 12.

—— Copper Mine, Sandy Cr., Star R. *Min.Ref.* Azurite, *see* 225, 226; Cuprite, 2465, 2466; Malachite, 6317; Tenorite, 7733; Tile Ore, 2566.

Kennedy North District—

SITUATION, ETC.: *See maps,* Pls. 16, 17. *Lat.,* 17°–21°; *Long.,* 144°–149°. Bounded on the N. by the District of Cook, on the E. by the Pacific Ocean, on the S. by the District of South Kennedy, and on the W. by the Districts of Mitchell, Burke, and Cook. The principal rivers and their tribs. are Tully, Herbert (trib. Stone), Ross, Houghton, Burdekin (tribs. Souttar, Rolleston, Campaspe, Cape, Fanning, Star, Dry, Clarke, Gregory, Basalt, Bogie, and Bowen), Don, Gregory, Proserpine, O'Connell (trib. Andromache), and Elliott.

AREA: 34,114 sq. miles. With islands included, 34,463 sq. miles.

PRINCIPAL MINING CENTRES: Gold and Mineral Fields—Kangaroo Hills, Balcooma, Piccadilly, Star R. (Argentine), Windsor, Charters Towers, Cape R., Strathalbyn, Ravenswood, Carrington, and Normanby (in part), *which see.*

COUNTIES: Burdekin Co., Cardwell Co., Walsh and Tinaroo Mineral Fields (*in part. See also* Gunnawarra Co. *See also under* Cook Dist.) Coolgarra (Tin Wolfram), Herberton (Tin, Wolfram), Mt. Garnet (Copper, Zinc), Newellton (Tin), Nymbool (Tin), Cardwell, Dungeness (now called Lucinda), Halifax, Herbert R., Ingham. Kangaroo Hills Mineral Field (*in part. See also* Wairuna Co. and Wilkie Gray Co.).

Clarke Co., Balcooma Goldfield, Lucky Downs Diggings.

Dalrymple Co., Charters Towers Goldfield (*in part. See also* Davenport Co., Murray Co.).

Davenport Co., Carrington Prov. Goldfield (Liontown). Charters Towers Goldfield (*principal part. See also* Dalrymple Co.). Millchester, Mt. Leyshon Mine (Silver-Lead). Ravenswood Goldfield (*in part. See also* Elphinstone Co., Gladstone Co., Murray Co., Wilkie Gray Co.). Windsor Prov. Goldfield.

Elphinstone Co., Boolangalla, Broughton, Cunningham, Fanning R., Grass Hut. Ravenswood Goldfield (*in part. See also* Davenport Co.). Star R. Mineral Field (*in part. See also* Wilkie Gray Co.).

Gladstone Co., Ayr, Clare, Noondoo. Ravenswood Goldfield (*principal part. See also* Davenport Co.) (Ravenswood Township), Strathalbyn Goldfield, Totley.

Griffith Co., Cape R. Goldfield (Capeville, Pentland, Upper Cape), Homestead Prov. Goldfield, Norwood.

Gunnawarra Co., Walsh and Tinaroo Mineral Fields (*in part. See also* Cardwell Co.). *See also under* Cook Dist.

Herbert Co., Bowen, Marengo Goldfield, Normanby Goldfield (*in part. See also under* Kennedy South Dist.).

Murray Co., Brookville, Canton Gold Diggings. Charters Towers Goldfield (*in part. See also* Dalrymple Co.). Ravenswood Goldfield (*in part. See also* Davenport Co.).

O'Connell Co.

Philp Co.

Salisbury Co., Wangaratta, Guthalungra, Red Hill.

Wairuna Co., Kangaroo Hills Mineral Field (*in part. See also* Cardwell Co.) (Ewan).

Wilkie Gray Co., Dalrymple. Kangaroo Hills Mineral Field (*in part. See also* Cardwell Co.). Piccadilly Goldfield. Ravenswood Goldfield (*in part. See also* Davenport Co.). Star R. Mineral Field (*in part. See also* Elphinstone Co.) (Argentine).

MINERAL REFERENCES AND STATISTICS: *See under* names of Principal Mining Centres.

Kennedy South District—

Situation, Etc. : *See maps*, Pls. 14, 15. *Lats.*, 20° and 25°; *Longs.*, 145° and 150°. Bounded on the N. by North Kennedy, on the W. by Mitchell, on the S.E. by Leichhardt and Port Curtis Districts, and on the E. by the Pacific Ocean. It is drained by the rivers, with their tribs., Burdekin (also running into North Kennedy) tribs. Sellheim, Rolleston, Cape, Campaspe, Souttar, Belyando, Bowen, and Broken, O'Connell and Pioneer.

Area : 30,514 sq. miles. With islands included, 30,549 sq. miles.

Principal Mining Centres : Gold and Mineral Fields—Normanby (*part*), Mt. Wyatt, Sellheim, Eungella (*partly*), Nebo (*partly*), Grasstree, Mt. Spencer, and Clermont (*partly*), *which see.*

Counties :

Albany Co. Beaufort Co. Bell Co.

Belyando Co., Alpha, Pinehill. Clermont Goldfield (*in part—See also* Dickson Co., Rutledge Co. *See also under* Leichhardt Dist.).

Carlisle Co., Alligator Cr. Gold Mines, Eton (Coal), Eungella Goldfield, Grass-tree Goldfield, Mackay, Mt. Spencer Gold and Mineral Field, Mirani (Coal). Nebo (Mt. Britton) Goldfield (*in part—See also under* Leichhardt Dist.). Normanby Goldfield (*in part—See also under* Kennedy North Dist.).

Chataway Co.

Dickson Co., Clermont Goldfield (*in part—See also* Belyando Co.).

Drake Co. Drummond Co. Drury Co. Foxton Co. (Hillalong).

Rutledge Co., Clermont Goldfield (*in part—See also* Belyando Co.).

Sellheim Co., Mt. Wyatt Goldfield, Sellheim Mineral Field (Silver, Bismuth) (Ukalunda).

Mineral References and Statistics : *See under* names of Principal Mining Centres.

Kennedy Seam, Pelican Cr., Bowen R. Coalfield. *Min.Ref.* Coal, *see* 1654, 1655.

Kennedy's Shaft, Mt. Perry. *Min.Ref.* Iron Pyrites, *see* 4986.

—— Yard Bore. *See under* Artesian Bores. No. 269.

Kensington Downs Sub-artesian Bores. *See under* Artesian Bores. No. 304.

Kent's Knob, 5½ miles W.N.W. of Degilbo. *Min.Ref.* Bismuthinite, *see* 362; Bismutite, 381; Gold, 3603; Iron Pyrites, 5001; Mispickel, 6659.

Keppel Bay View Mine, New Zealand Gully, Cawarral Goldfield. *Min.Ref.* Gold, *see* 4327.

Keppel Bay Islands, east of Rockhampton. About *Lat.* 23° 30′ S.; *Long.*, 151° 0′ E. *Min.Ref.* Apatite, *see* 81; Copper, 1857; Rhodochrome, 7065; Turquoise, 7905-7908; Vanadium, 7916.

Geological Note : Curtis Island is made up of quartzites and shales of Deronian Formation. Keppel Rocks, Arch Rock, Peak Island, Divided Island, Great Keppel Island, North Keppel Island, Middle Island, and Myall Island are all composed of thin-bedded quartzites and shales of similar formation to that of Curtis Island. Double Island, near Yeppoon, is a trachytic volcanic neck. *See* G.S.Q. Pub. No. 143 for notes.

Keppel Rocks, Keppel Bay. *Min.Ref.* Apatite, *see* 81; Copper, 1857; Turquoise, 7905-7908; Vanadium, 7916.

Geological Note : The rocks are made up of thin-bedded quartzite and slate, traversed in all directions by numerous quartz veins. Green turquoise is found in the veins, and is also distributed irregularly in the quartzites.

Kerargyrite. *Syn.* Cerargyrite, *which see.*

Kerlong Range, 30 miles S.W. of Mackay. *Min.Ref.* Coal, *see* 1705.

Kerosene Shale. No authentic occurrences of kerosene shale *in situ* are known in the State, although discoveries are reported from time to time. The "kerosene shale" mentioned as occurring in some of the Artesian Bores of Western Queensland is probably a dense carbon-bearing shale. A substance very much like kerosene shale has been found near Toowoomba, on a branch of The Narrows close to Gladstone, on Casuarina Island, and in other localities, references to which are given under the heading of Oil-bearing Shales. *See* Artesian Bore Notes. *See* note under Oil.

5712a.—— ——. Reported occurrence in well about 70 miles southerly of Springsure on Collie Blue Station, Carnarvon Range. *Co.* Consuelo; *Dist.* Leichhardt. *Ref.* near Burke, Springsure.

5713. —— ——. In drift, on Mathieson's Sel., Dawson River Coalfield, 75 miles S.W. of Rockhampton. *Co.* Kimberley; *Dist.* **Leichhardt.** *Ref.* B.D.

5714. —— ——. Eight-mile Plains, 8 miles S.E. of Brisbane. *Co.* Stanley; *Dist.* Moreton.

Kerr Bros.' Tin Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 787.

Kerry, Par. of (Por. 53v), S.E. of Beaudesert. *Min.Ref.* Coal, *see* 1782E.

Kerry Cr., on Por. 53, S.E. of Beaudesert Rail. Stn. *Min.Ref.* Coal, *see* 1782E.

Kettle Swamp (Law's Gully), trib. of Quart Pot Cr., Stanthorpe. *Min.Ref.* Amethyst, *see* 7168; Beryl, 293; Cairngorm, 7176; Cassiterite, 985, 986, 994, 1003, 1004; Chromite, 1473; Copper Pyrites, 2184; Diamond, 2575, 2576; Garnet, 3117; Hyacinth, 8233; Molybdenite, 6850; Rock Crystal, 7189; Sapphire, 2348; Spinel, 7578; Topaz, 7793; Tourmaline, 7858; Wolfram, 7986; Zircon, 8233.

—— —— and Quart Pot Crs. (junction of), Stanthorpe. *Min.Ref.* Chromite, *see* 1473.

Kholo (near), 3 miles N. of Ipswich. *Min.Ref.* Clay Ironstone, *see* 1591; Iron Pyrites, 5348; Limonite, 5902; Turgite, 7902.

Kholo Flat, Running R., 9 miles N. of Kilkivan Rail. Stn. *Min.Ref.* Psilomelane, *see* 7104.

——. (Par. of), 7 miles N. of Ipswich. *Min.Ref.* Jasper, *see* 5646; Manganese-dioxide, 6452-6454.

Kianga Range, Dawson R. Valley., S.byW. of Rockhampton. *Min.Ref.* Copper, *see* 1852.

Kieselguhr. *Syn.* Tripolite. *See under* Opal, of which it may be considered a porous variety.

Kilcowra Bore. *See under* Artesian Bores. No. 177.

Kilcoy Creek, 12 miles N. of Kilcoy. *Min.Ref.* Copper, *see* 1855A.

Kilcummin Run Bore *See under* Artesian Bores. No. 305.

Kilkivan—

SITUATION: *See maps,* Pls. 4, 5. The town is 65 miles (by rail) S.S.W. of Maryborough, 45 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Lat.*, 26° 5′ S.; *Long.*, 152° 14′ E.

POPULATION: (Included in Gympie Returns).

RAILWAY BASE for Kilkivan, Black Snake, Marodian, and Yorkey's Goldfields; Colo Gold Mines, Mudloo, Teebar, Munna, and Calgoa Copper Mines; Mt. Cobalt and Mt. Coora Cobalt Lodes, Mt. Clara and Mt. Coora Copper Mines, and Cinnabar Lodes at the head of Wide Bay Creek, Black Snake District.

RAINFALL: Yearly aver. between 1902 and 1907, 24·10 inches, and 49 wet days.

PROCLAMATION OF GOLDFIELD: First, and only one, gazetted July 27, 1868, as follows:—Commencing at the junction of Fat Hen Creek with Wide Bay Creek, and bounded by a line bearing south six miles; thence west five miles; thence north about four miles to the Wide Bay Creek; thence by that creek downwards to the point of commencement.

PROCLAMATION OF MINERAL FIELD: First, and only one, gazetted March 30, 1899, as follows:—Commencing on the left bank of Wide Bay Creek where it is intersected by the S. boundary of por 860, par. of Brooyar, and bounded thence by the S., the W., and the N. boundary of that por. bearing W., N., and E.; thence by the E., the N., and part of the W. boundary of por. 1487, par. of Kilkivan, bearing N.W. and S., by the northern boundaries of pors. iv., 1053, and Occupation License 16, bearing Wly. to the range forming the western watershed of the Mary River, by that range Sly. and Ely. to the watershed dividing Kalunga Creek and its tributaries from Widgee Creek and its tributaries, by that watershed N.Wly. about three miles to the S.E. corner of forfeited Mineral Selection 1127; thence by the E. boundary of that por., the E. and the N. boundary of forfeited Mineral Selection No. 1126, the E. boundary of por. 120, the E. and part of the N. boundary of freehold Mineral Selection No. 989, the E. and part of the N. boundary of forfeited Mineral Selection 2611; thence by the S. boundary of por. 2v and a line bearing E. about a mile and forty chains; thence by the W. boundary of the leased part of Widgee Run bearing N. to Wide Bay Creek, and by that Creek upwards to the point of commencement; exclusive of the Kilkivan Goldfield, and all alienated lands.

Kilkivan—*continued:*

AREA OF GOLDFIELD: 19,200 acres (30 sq. miles).

AREA OF MINERAL FIELD: 128,000 acres (200 sq. miles).

LEASES: Goldmining leases in force, *nil;* miners' homesteads in force, 232; area, 2,473 acres (1912).

PRINCIPAL MINING CENTRES: Black Snake (including Mt. Cobalt and Mt. Coora Cobalt Lodes), Marodian and Yorkey's Goldfields, and Kilkivan Cinnabar Lodes, *which see.*

MINERAL STATISTICS:

Silver,	*see tables,*	Pls. 37, 46, 46A.
Copper,	,,	Pls. 39, 46, 46A.
Antimony,	,,	Pls. 40, 46, 46A.

STATISTICAL NOTES: *See under* other Goldfields.

MINERAL REFERENCES: Gold, 4401-4406; Silver, 7533-7539; Mercury (Cinnabar), 1549-1563; Lead (Galena), 3077; Copper (Azurite), 256, 257; Copper (carbonate), 1964-1968; Copper (native), 2014; (Copper Pyrites), 2326, 2327; (Cuprite), 2483, 2484; (Malachite), 6379-6381; (Redruthite), 7308-7310; Bismuth (Bismuthinite), 376; Arsenic (native), 100; Zinc Blende, 8210A; Manganese-dioxide, 6490; Cobalt (Asbolane), 121; Chromite, 1489; Iron (Iron Pyrites), 5448-5449A, 5449A; (Limonite, 5924, 5925; (Magnetite, 6063; Ironstone, 5633A; Limestone, 696. Other Minerals: Asbestos, 115; Calcite, 551-558; Jasper, 5653; Lydianstone, 5659; Magnesite, 5963A; Tourmaline, 7873.

GEOLOGICAL NOTE: The rocks are greenish serpentine, foliated serpentinous schists, and occasional beds of clay slate, with intrusions of quartz porphyry, hornblende porphyry, and diorite. Cobalt occurs in the serpentine in zones of alteration, and in association with manganese. Gold and copper is present in the neighbourhood in pyritous ore in quartz reefs, while cinnabar lodes occur (1) in granite, (2) in mica and chlorite schists, and (3) in beds of sandstone, shale, and conglomerate. The lodes are in the form of stockwerks and small veins, the ore being associated with calcite and quartz. *See* G.S.Q. Pubs. Nos. 28 and 79 for details and maps.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 28 (1886), 79 (1892), 169 (1901). *See* Geol. Surv. Pub. List for title.

WARDEN and INSPECTOR OF MINES: Both stationed at Gympie.

SMELTING WORKS: (United Reef Mine). *See under* Smelting Works in Queensland.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

GENERAL INFORMATION: Consult *Pugh's Almanac; Queensland Post Office Directory; Post and Telegraph Guide.*

OFFICIAL MONTHLY NEWS: Consult *Queensland Govt. Mining Jour.* (Brisbane).

Kilkivan Gold and Mineral Fields. *See details under* Kilkivan.

—— Gold Mine, Black Snake. *Min.Ref.* Copper Ores, *see* 2046A; Gold, 4388; Silver, 7535.

—— and Degilbo (between). *Min.Ref.* Limestone, *see* 628.

—— and Wide Bay Cr. (between the), 8 miles S. of Kilkivan Rail. Stn. *Min.Ref.* Cinnabar, *see* 1563.

Killarney, 28 miles (by rail) E.S.E. of Warwick. *Lat.*, 26° 8′ S.; *Long.*, 148° 20′ E. *Min.Ref.* Coal, *see* 1637; Tripolite, 7028. *See also* Supplementary Report List No. 27.

GEOLOGICAL NOTE: The rocks in the district comprise shales, sandstones, and coal seams belonging to the Ipswich Formation (Trias-Jura). They are in places disturbed by intrusions or covered by flows of basalt.

—— Co. Leichhardt Dist. *See map*, Pl. 10.

Killeeno Sub-artesian Bore. *See under* Artesian Bores. No. 241.

Killminster, Severn R., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1014.

Kimberley Co. Leichhardt Dist. *See map*, Pl. 10.

—— Cr., Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 776, 777.

Kimuta Is., Renard Group, Brit. New Guinea. *Min.Ref.* Calcite, *see* 562; Limestone 703, (coralline) 728.

King of Attila Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— Bombi Creek, 6½ miles W.S.W. of Kilkivan. *Min.Ref.* Calcite, *see* 551; Cinnabar, 1562.

—— Co. Cook Dist. *See map,* Pl. 8.

—— Edward VII. Claim, Bishop's Cr., E.S.E. of Cloncurry. *Min.Ref.* Gold, *see* 3452A; Ironstone, 5482A; Silver, 7424A.

—— Gold Reef, Mt. Clifford Mine. *Min.Ref.* Gold, *see* 4167.

—— of Croydon Gold Reef (also called Croydon King), Croydon Goldfield. *Min.Ref.* Galena, *see* 2703; Gold, 3498; Graphite, 4583; Hematite, 4692; Iron Pyrites, 4957.

King of Croydon Mining Centre, Croydon Goldfield. *Includes* King of Croydon, Pack Saddle, Richmond, and Emperor Reefs. *Min.Ref.* Galena, *see* 2703; Gold, 3498-3500; Graphite, 4583; Hematite, 4692; Iron Pyrites, 4957.

—— of the Ranges Reef, Palmer Goldfield. *Min.Ref.* Gold, *see* 3680.

—— —— Gold Mine, New Zealand Gully, Towalla Goldfield. *Min.Ref.* Gold, *see* 3785.

—— —— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 906; Chlorite, 1438A; Copper Pyrites, 2160A; Felspar, 2636; Galena, 2783A; Garnet, 3103A; Mispickel, 6692A; Wolfram, 7951A.

—— of Wallabadah Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Galena, *see* 2710A1; Gold, 3521; Iron Pyrites, 4953A; Ironstone, 5496A.

—— Solomon Mine, Emu Plains Silver Field. *Min.Ref.* Barytes, *see* 276; Native Silver, 7559.

—— of the North Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 905; Copper Pyrites, 2160; Iron Pyrites, 5065; Mispickel, 6692.

—— of the Springs Reef, Flanagan's, Croydon Goldfield. *Min.Ref.* Gold, *see* 3504.

King's Bore. *See under* Artesian Bores. No. 435.

—— Cr. Coal Mines, 40 miles S. of Toowoomba. *Min.Ref.* Coal, *see* 1625A.

—— —— Rail. Stn. (main line), 40 miles S. of Toowoomba. *Co.* Aubigny; *Dist.* Darling Downs.

—— Copper Sel., Callide Cr., 50 miles S.W of Gladstone. *Min.Ref.* Copper carbonate, *see* 1963; Magnetite, 6053.

King's Siding, 14 miles from Toowoomba. *Collieries.*—Gowrie, and old mines abandoned many years ago. *See note under* Kingsthorpe.

—— Silver Lode, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2227; Galena, 2934; Iron Pyrites, 5259; Silver, 7485; Stephanite, 7603; Stibnite, 7643; Zinc Blende, 8152.

—— Reefs (1, 2, and 8), Canoona Goldfield. *Min.Ref.* Gold, *see* 4315A, 4315B; Iron Pyrites, 5398A, 5398B.

Kingar Cr., 45 miles W. of Gayndah. *Min.Ref.* Sapphire, *see* 2339A.

Kingaroy, 120 miles (by rail) S.W. of Maryborough (Kilkivan line). *Min.Ref.* Ilmenite, *see* 4885; Muscovite, 6887; Rutile, 7324; Sapphire, 2339; Tourmaline, 7824.

Kingsborough, Hodgkinson Goldfield. *See* Pl. 22. *Lat.,* 16° 57′ S.; *Long.,* 145° 8′ E. *Min.Ref.* Galena, *see* 2760; Gold, 3746-3753. *See also* Supplementary Report List, No. 127.

Kingsford's Sluicing Claim (on lead parallel with), Barron R., Cairns. *Min.Ref.* Cassiterite, *see* 959; Gold (alluvial), 3218.

Kingston. *Min.Ref.* Coal, *see* 1772; Gold, 4217A; Silver, 7509A; Kaolin, 5698; Tin, 1173.

Kingsthorpe, Rail. Stn., 12 miles from Toowoomba. *Collieries.*—Sugarloaf, Kingsthorpe, Sunrise, and Enterprise. *See* Coal, 1625C. There are no published reports on recent developments in the coal mines of the Darling Downs.

DISCOVERY: Coal was found in the first shaft sunk on Gowrie Colliery at Kingsthorpe in 1887, but it was only at the beginning of 1889 that operations became permanent, and the mine started to be a paying concern.

GEOLOGICAL NOTE: The coal measures belong to the Walloon Series (Trias-Jura), and are a continuation of the same series near Ipswich.

—— Bores. *See* Scrubby Creek Bores, *under* Coal Bores.

Kipper Cr., W. of Esk Rail. Stn. *Min.Ref.* Galena, *see* 3030A; Iron Pyrites, 5334; Zinc Blende, 8175B.

Kirby's (Lake View) Bore. *See under* Artesian Bores. No. 154.

Kiriwinia, Brit. New Guinea. *Min.Ref.* Calcite, *see* 561; Celestine, 1176.

Kirk Diggings, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4014.

GEOLOGICAL NOTE: The rocks comprise biotite granite and granite porphyry, along the junction lines of which there is a belt of reef-bearing country. The reefs are auriferous, and highly mineralized with galena and pyrites, and are accompanied by diorite dykes. *See* G.S.Q. Pub. 183 for details.

Kirkwood's Manganese Workings. *Min.Ref.*, *see* No. 6464.

Kitten Lead, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3327.

Kitty Gully, Munburra, Starcke Goldfield. *Min.Ref.* Gold (alluvial, *see* 3200A.

—— O'Shea Mine, Far Fanning. *Min.Ref.* Gold, *see* 3992.

Klasted and Party's Reef, Old Homestead Diggings. *Min.Ref.* Gold, *see* 4069.

Klondyke King Mine, Coen Goldfield. *Min.Ref.* Gold, *see* 3799.

—— Mining Centre, Coen Goldfield. *Min.Ref.* Gold, *see* 3799; Hornblende, 4830.

Knight's Gully, Magnetic Is., Cleveland Bay. *Min.Ref.* Gold, *see* 3998.

Knob Bore. *See under* Artesian Bores. No. 134.

Koffman Diggings (Rannes Goldfield). *See under* Kauffman.

Koh-i-nor Mine, Coolgarra. *Min.Ref.* Anglesite, *see* 40; Galena, 2845; Malachite, 6277; Minium, 6594; Mispickel, 6739; Silver, 7478; Zinc Blende, 8108.

—— Tin Mine, Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 761.

Kooingal, 72 miles S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis.

GEOLOGICAL NOTE: In this locality there are extensive deposits of fossiliferous limestones belonging to the Gympie Formation (Permo-Carboniferous). *See* G.S.Q. Pub. No. 92, p. 89, for notes.

Koolatah Co. Cook Dist. *See map,* Pl. 8.

Koorboora—

SITUATION: *See maps,* Pls. 8, 9, 22. The town of Koorboora is 108 miles (by rail) S.W.byW. of Cairns (Chillagoe line). *Co.* Lynd; *Dist.* Cook. *Lat.*, 170° 24′ S.; *Long.*, 144° 50′ E.

DISCOVERY: The Koorboora Tin Lodes were discovered by Mr. Anthony Linedale, in August, 1888.

RAILWAY BASE and Centre for group of tin mines, including the Shakespeare, Iolanthe, Rosalind, etc., Mines.

POPULATION: *Included in* Chillagoe Mineral Field (Census, 1911).

MINERAL STATISTICS: Tin—*Included under* Herberton. *See* Pls. 38, 46, 46A.

MINERAL REFERENCES: Silver 7461, (native) 7551; Lead (Galena), 2797-2800; Copper (Azurite) 196, (Copper Pyrites) 2170, (Malachite) 6232; **Tin** (Cassiterite), 942-948; Wolfram, 7968, 7968A; Iron (Iron Pyrites) 5075, 5076, (Magnetite) 5991, (Mispickel) 6702, 6703. Other Minerals: Chlorite, 1443; Garnet, 3108; Gypsum, 4615; Mica, 6558; Serpentine, 7384.

GEOLOGICAL NOTE: The rocks at Koorboora are shales, sandstones, mudstones, grits, and conglomerates, which, near the head of Koorboora Creek, are intersected by felsitic dykes. The ore deposits, containing tin, occur in a series of hardened sandstones and mudstones. Coal Measures ("Desert Sandstone") exist about 3 miles N.E. of Koorboora Rail. Stn., but no workable seam has yet been discovered. *See* G.S.Q. Pubs. 69 and 192 for details and map.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 69 (1891) and 192 (1904). Map No. 220 (1909). *See under* Geol. Surv. Pub. List for title.

WARDEN: Stationed at Chillagoe; INSPECTOR OF MINES: Stationed at Herberton.

—— (5 and 8 miles S. of), Chillagoe line. *Min.Ref.* Azurite, *see* 196; Garnet, 3108; Magnetite, 5991; Malachite, 6232.

—— Well, Koorboora. *Min.Ref.* Gypsum, *see* 4615.

Koreelah Sub-artesian Bore. *See under* Artesian Bores. No. 205.

Koroit Opal Field—

Situation: *See maps,* Pls. 18, 19. 38 miles N.N.W. of Cunnamulla Rail. Stn., 48 miles N.N.E. of Eulo. Centre about *Lat.* 27° 55′ S., *Long.* 145° 25′ E.

Discovery: In 1897.

Mineral Statistics: Included in Cunnamulla Mineral Field.

Mineral Reference: Opal (precious), *see* 6954.

Geological Note: *See* Cunnamulla Mining District.

Geological Publication: Report—No. 177 (1902). *See* Geol. Surv. Pub. List for title.

Warden (acting): Stationed at Cunnamulla; Inspector of Mines: Stationed at Gympie.

Kristy's Flats, Burnett R. *Min.Ref.* Precious Opal, *see* 6938.

Kroombit Copper Mines, 56 miles S.S.W. of Gladstone. *Min.Ref.* Azurite, *see* 253a; Copper Pyrites, 2306a; Cuprite, 2479a; Hematite, 4799a; Iron Pyrites, 5414a; Limonite, 5919a; Magnetite, 6054a; Malachite, 6372a.

—— Cr., 5 miles above Kroombit Head Station. *Min.Ref.* Azurite, *see* 253; Limestone (coralline), 725; Magnetite, 6052; Malachite, 6372.

Kroombit Diggings. Discovered by "Greasy Peter," in February, 1870.

Geological Note: *See under* Cania Goldfield.

Kruger Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

Krumholz's Lease, Kangaroo Hills Mineral Field. *Min.Ref.* Fluorspar, *see* 2684a; Wolfram, 8032a.

Kudnapper Bore. *See under* Artesian Bores. No. 224.

Kalkah Co. Cook Dist. *See map,* Pl. 8.

Kulpi Bore. *See under* Artesian Bores. No. 445.

Kungaberch Bore. *See under* Artesian Bores. No. 185.

Kungie Co. Warrego Dist. *See map,* Pl. 18.

Kurrajong Sub-artesian Bore. *See under* Artesian Bores. No. 146.

Kyabra (or Yeronghoola) **Opal Field.** *Includes* Little Wonder, Yellow Nell, Pinnacles, Cunnavalla, Quart Pot Creek, and Mulcahy's Mines, *which see.*

Situation: *See maps,* Pls. 18, 19, 28 to 34 miles W. of Eromanga. *Lat.,* 26° 20′; *Long.,* 143° 9′.

Mineral References: Opal (precious), 6946b-6948b.

Mineral Statistics: Included in Eromanga.

Geological Note: *See under* Eromanga.

Geological Publications: Report—No. 177 (1902). *See* Geol. Surv. Pub. List for title.

Kyabra Co. Gregory South Dist. *See map,* Pl. 18.

Kyanite. *Syn.* Cyanite. *Compo.,* Silicate of alumina. *Colour,* bluish or white. Pearly. *H.* = 5·7. *Sp. gr.* = 3·6-3·7.

5715. ——. *Assoc.with* Muscovite. *Loc.* 45 miles N.W. of Mackinlay. *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* B.D.

5716. ——. *Assoc.with* Enstatite (?) and a Nickel Silicate resembling Pimalite, in talcose casing, in cobalt lode. *Loc.* Mt. Cobalt, Black Snake, 7 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 38, p. 1 (1887).

Kyneton Bore. *See under* Artesian Bores. No. 156.

Kynuna Co. Gregory North Dist. *See map,* Pl. 20.

Kynuna Opal Field. *Includes* Kariff's or Company's, Macpherson, and Stewart's Claims. Centre about *Lat.* 21° 35′ S., *Long.* 141° 55′ E. Precious Opal was discovered here in 1894.

Situation: *See maps*, Pls. 20, 21. 80 miles W.N.W. of Winton Rail. Stn., Windsor Mineral Field.

Discovery: In year 1894, by Peter Kariff.

Mineral Statistics: Included in Windsor Mineral Field.

Mineral Reference: Opal (precious), *see* 6940.

Geological Note: *See* Windsor Mineral Field. 177

Geological Publications: Report—No. 117 (1902). *See* Geol. Surv. Pub. List for title.

Warden: Stationed at Charleville. Warden also at Thargomindah. Inspector of Mines: Stationed at Gympie.

—— Lease Bores. *See under* Artesian Bores. Nos. 306-308. *Min.Ref.* Coal, *see* 1641b.

—— Town Bore. *See under* Artesian Bores. No. 30.

Kyrunda Co. Warrego Dist. *See map*, Pl. 18.

La Reine D'Or Lease (554), Croydon Goldfield. *Min.Ref.* Galena, *see* 2704; Gold, 3489; Iron Pyrites, 4938; Zinc Blende, 8056.

Labouchere Co. Leichhardt Dist. *See map*, Pl. 10.

Labour Victory R.C. (29), Cloncurry. *Min.Ref.* Iron Pyrites, *see* 5134; Limonite, 5870; Malachite, 6255; Redruthite, 7296; Tenorite, 7725; Tile Ore, 2559.

Labrador Felspar. *Syn.* Labradorite, *which see.*

Labradorite. *Syn.* Labrador Felspar. *Compo.*, Silicate of alumina, lime, and soda. *Colour*, grey, greenish. Usually with play of colours. *H.* = 6; *Sp.gr.* = 2·6-2·7.

5717. ——. (Showing play of colours.) *Loc.* Valley, W. of Mt. Euri, nr. head of Dugald R., 40 miles N.byW. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 7 (1885).

Ladbury's Bore. *See under* Artesian Bores. No. 380.

Lady Group of Copper Mines, Cloncurry. *Includes* Lady Ethleen, Lady Nicotine, Lady Jenny, Lady Emily, Lady Amy, Lady Ethel, Morning Star, etc., M. Leases. *Min.Ref.* Azurite, *see* 162a; Chrysocolla, 1502a; Limonite, 5775a, 5775b; Malachite, 6134a, 6134b; Redruthite, 7236a, 7236b; Tile Ore, 2518a.

—— Alma Reef, Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3640.

—— Ann Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— Annie Mine, Cawarral Goldfield. *Min.Ref.* Serpentine, *see* 7393.

—— —— Silver Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 51; Cerussite, 1272; Hematite, 4753; Malachite, 6313; Minium, 6617.

—— Augusta Lease (45), Eidsvold Goldfield. *Min.Ref.* Cuprite, *see* 2421; Gold, 3641; Hematite, 4702; Stibnite, 7611.

—— —— P.A. (129), S.W. of Bowen. *Min.Ref.* Copper Pyrites, *see* 2240b; Gold, 4078a; Iron Pyrites, 5276a; Limonite, 5879b.

—— Caroline Mine, Leyburn Goldfield. Discovered in 1882 by Mr. T. Prusson. *Min.Ref.* Gold, *see* 3844.

—— Catherine Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3749.

—— —— Tin Mine, Hodgkinson Goldfield. *Min.Ref.* Epsomite, *see* 2613.

Lady Clayre Group of Copper Mines, Cloncurry. *Includes* Lady Clayre, Dispute, and Balaclava M. Leases. *Min.Ref.* Limonite, *see* 5741, 5742; Malachite, 6070, 6071; Tile Ore, 2492.

—— —— M.L. (279), Cloncurry. *Min.Ref.* Limonite, *see* 5742; Malachite, 6071; Tile Ore, 2492.

—— Eleanor Reef, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 4163.

Lady Fanny Group of Copper Mines, Cloncurry. *Includes* Lady Fanny, Italian, Prodigal, Chum Victoria, Blue Spec, Burke and Wills, etc. M. Leases. *Min.Ref.* Native Copper, *see* 1996; Copper Pyrites, 2201, 2202; Limonite, 5862, 5863; Malachite, 6259-6261; Redruthite, 7286; Tile Ore, 2553-2555.

—— —— M.L. (178), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2202; Malachite, 6260; Tile Ore, 2554.

—— Flora Mine, Gympie Goldfield. *Min.Ref.* Copper (native), *see* 2015; Ironstone, 5634.

—— Florence Mine, Chowey Cr. Goldfield. *Min.Ref.* Gold, *see* 3569; Molybdenite, 6819.

—— Frances Mine, Gebangle. *Min.Ref.* Copper carbonate, *see* 1878; Gold, 3577; Iron Pyrites, 4979.

—— Franklin Reef, Caledonia Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3737; Ironstone, 5521; Manganese-dioxide, 6406.

—— Griffith Reef, Monal Goldfield. *Min.Ref.* Gold, *see* 4262.

—— Isabella Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3550; Iron Pyrites, 4966A.

—— —— Reef, Croydon Goldfield. *Min.Ref.* Native Copper, *see* 1983; Gold, 3549.

—— Isabella Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3522; Iron Pyrites, 4954A.

—— Jane Mine, Montalbion. *Min.Ref.* Anglesite, *see* 23; Cerargyrite, 1179; Cinnabar, 1542; Galena, 2768; Silver, 7452, 7452A; Tetrahedrite, 7761.

—— —— ——, 1 mile S.E. of Mungana. *Min.Ref.* Azurite, *see* 195; Cerussite, 1208; Cuprite, 2440; Galena, 2806; Garnet, 3111; Malachite, 6238; Silver, 7464; Tetrahedrite, 7766.

—— —— ——, Eukalunda, Sellheim Mineral Field. *Min.Ref.* Azurite, *see* 232; Limonite, 5888; Malachite, 6330; Mispickel, 6768; Scorodite, 7372.

—— —— ——, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3837.

—— —— ——, Paradise Goldfield. *Min.Ref.* Gold, *see* 3612.

—— Jenny M.L. (234), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1502A; Limonite, 5775A; Malachite, 6134A; Redruthite, 7236A.

—— Lottie, Twelve Mile, Croydon Goldfield. *Min.Ref.* Gold, *see* 3557.

—— Margaret Mine, Cawarral Goldfield. *Min.Ref.* Gold, *see* 4324.

—— —— ——, Paradise Goldfield. *Min.Ref.* Gold, *see* 3613.

—— Maria Mine, Charters Towers Goldfield. *Min.Ref.* Gold, *see* 3910; Iron Pyrites, 5176.

—— —— Reef, Georgetown, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2754; Gold, 3728; Iron Pyrites, 5047.

—— Mary Mine, Cloncurry. *Min.Ref.* Malachite, *see* 6082.

—— —— ——, Eukalunda, Sellheim Mineral Field. *Min.Ref.* Cuprite, *see* 2467; Malachite, 6331.

Lady Mary Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3490.

—— —— N. (508), 2 N. (411), 3 and 4 N. (228), and 5 N. Leases (653), Gympie Goldfield. *Min.Ref.* Gold, *see* 4452-4455.

—— —— 7 S. L. (670), Gympie Goldfield. *Min.Ref.* Gold, *see* 4456.

—— —— Mine, Mt. Wyatt Goldfield. *Min.Ref.* Azurite, *see* 233; Copper Pyrites, 2265; Malachite, 6332.

—— —— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4512; Platinum, 7074A.

—— —— ——, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— —— ——, Sandy Cr., S.W. of Warwick. *Min.Ref.* Gold, *see* 3875.

—— Mina M.L. (552), Cloncurry. *Min.Ref.* Malachite, *see* 6083; Redruthite, 7207.

—— Minerva Lease (68), Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3642.

—— Norman Reef, Broken R., 10 miles S. of Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4103; Iron Pyrites, 5296.

—— —— and Reid's Cr. Mine, S.W. of Mt. Perry. *Min.Ref.* Galena, *see* 2719; Gold, 3594; Iron Pyrites, 4992; Mispickel, 6652; Stibnite, 7605.

—— Normanby Block (609), Stanthorpe. *Min.Ref.* Cassiterite, *see* 1007; Wolfram, 7991.

—— O'Reilly Mine, Normanby Goldfield. *Min.Ref.* Gold, *see* 4128A; Iron Pyrites, 5306.

—— Rose Lease, Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3643; Malachite, 6206.

Lady South Group of Copper Mines, Cloncurry. *Includes* Lady South, Fountain Head, and Evening Star M. Leases. *Min.Ref.* Copper, *see* 2018.

—— —— M.L. (297), Corella R., Cloncurry. *Min.Ref.* Copper Ore, *see* 2018A.

Lagoon Cr., Caboolture. *Min.Ref.* Beryl, *see* 297; Topaz, 7807.

—— —— Bores. *See under* Artesian Bores. Nos. 72, 292, 297.

Lah-di-dah Cr., trib. of Kelsey Cr., Happy Valley. *Min.Ref.* Copper Pyrites, *see* 2239; Hematite, 4741; Iron Pyrites, 5274.

Laidley, 51 miles (by rail) W.byS. of Brisbane (main line). *Lat.*, 27° 38′ S.; *Long.*, 152° 25′ E.

GEOLOGICAL NOTE: The country in and around the town is made up of sandstones, shales, etc., belonging to the Walloon Coal Series (Trias-Jura). The occurrence of a small coal seam in this locality is reported. *See under* Coal Bores.

—— Town Bore. *Min.Ref.* Coal, *see* 1723B. *See under* Artesian Bores, No. 31; *also under* Coal Bores.

Lake Bore. *See under* Artesian Bores. No. 141.

—— Buchanan, 80 miles S.S.E. of Pentland Rail. Stn. *Min.Ref.* Halite, *see* 4657A.

—— Buchanan Bore. *See under* Artesian Bores. No. 451.

—— Dunne Run Sub-artesian Bore. *See under* Artesian Bores. No. 309.

—— Eacham, 29 miles S.byW. of Cairns. *Min.Ref.* Ilmenite, *see* 4894; Olivine, 6923.

Lake Elphinstone, 31 miles W. of Nebo. For coal references *see under* Bee Cr., Carborough Cr., Hail Cr.

—— Lucy, Upper Burdekin R. *Min.Ref.* Chalcedony, *see* 1345; Hematite, 4739; Limonite, 5879.

—— Nash Sub-artesian Bore. *See under* Artesian Bores. No. 310.

—— Weyba, Laguna Bay, about 2 miles N. of Noosa R. *Min.Ref.* Coal, *see* 1825.

Lake's Original Opening, Mt. Amos, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 794; Tourmaline, 7832.

Lakeside, nr. Degilbo Rail. Stn. *Min.Ref.* Azurite, *see* 178; Göthite, 4564; Limonite, 5829; Malachite, 6197.

Lakeview (Kirby's) Bore. *See under* Artesian Bores. No. 154.

Laird of the Hills M.L. (32), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235J; Copper Pyrites, 2269E; Hematite, 4769E; Iron Pyrites, 5327E; Malachite, 6339M.

Laman's Opal Mine, 23 miles W.S.W. of Eromanga. *Min.Ref.* Opal (precious), *see* 6948C.

Lambert Bros.' Mine, Macdonald Prov. Goldfield. *Min.Ref.* Gold, *see* 3842B.

Lamington Co. Burke Dist. *See map,* Pl. 20.

—— Gold Mine, Happy Valley. *Min.Ref.* Copper Pyrites, *see* 2239; Hematite, 4741; Iron Pyrites, 5274. *See also* A.R.D.M., pp. 171, 172 (1907).

Lammermoor Sub-artesian Bores. *See under* Artesian Bores. No. 311.

Lamona Mine, Busby's Gully, Ulam Goldfield. *Min.Ref.* Copper carbonate, *see* 1957; Galena, 3055; Gold, 4303; Iron Pyrites, 5394.

Lampton Meadow Sub-artesian Bore. No. 301.

Lana (Oondooroo No. 1) Bore. *See under* Artesian Bores. No. 370.

Lancashire Lass and 1 W. (Good Luck) Mine, Far Fanning. *Min.Ref.* Copper Pyrites, *see* 2222; Gold, 3991, 3993; Iron Pyrites, 5227, 5228; Limonite, 5876; Mispickel, 6744. *See also under* Q.G.M.J., vol. 2, p. 406 (1901).

Lancelot Copper Mine, Newellton. *Min.Ref.* Cinnabar, *see* 1541A; Olivenite, 6917A.

—— Tin Mines, 6 miles E.S.E. of Irvinebank. *Min.Ref.* Native Bismuth, *see* 345, 346; Calamine, 443; Cassiterite, 1139; Cerussite, 1225; Copper, 1845; Copper Pyrites, 2214; Galena, 2864; Iron Pyrites, 5144; Ironstone, 5547; Zinc Blende, 8112, 8113; Enargite, 2590A.

Lancewood Tin Mines, Brookland Stn., W.S.W. of Fossilbrook. *Min.Ref.* Beryl, *see* 291, 299; Cassiterite, 969; Topaz, 7790, 7791.

Land's End Bore. *See under* Artesian Bores. No. 178.

Landsborough, 51 miles (by rail) N. of Brisbane (North Coast line). *Co.* Canning; Dist. Moreton. *Min.Ref.* Coal, *see* 1711A.

GEOLOGICAL NOTE: The rocks in the district comprise coal-measures belonging to the Ipswich Series, basalt, and granite. The Ipswich Series extend towards the east, with basalt and granite to the west on the Blackall Range. Coal exists in the district, but the seams so far discovered are too small to work.

—— Co. Burke Dist. *See map,* Pl. 20.

—— Downs Bores. *See under* Artesian Bores. No. 312.

Landslip Reef, Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4101A; Iron Pyrites, 5292A.

Lane's Creek Mining Centre, Etheridge Goldfield. *Includes* Brilliant Caledonia, Calliope, Cosmopolitan, Jenolan, National, and Sir William Alfred Reefs. *Min.Ref.* Gold, *see* 3715.

Lang Co. Cook Dist. *See map,* Pl. 8.

Langan's Mine, Mt. Langan. *Min.Ref.* Galena, *see* 3032A; Gold, 4195A; Silver, 7507A; Zinc Blende, 8176A.

Langdale Hill, Tooloombah Stn., 26 miles S. of St. Lawrence. *Min.Ref.* Gold, *see* 4349; Iron Pyrites, 5411.

Langdon Downs, 6 miles E. of Clermont. *Min.Ref.* Limestone (magnesian), *see* 742.

Langdon's Sub-artesian Bore. *See under* Artesian Bores. No. 178.

Langlo Co. Warrego Dist. *See map,* Pl. 18.

—— Downs Bore. *See under* Artesian Bores. No. 315.

Langmorn Gold and Mineral Field—

SITUATION: *See maps,* Pls. 2, 3, and 34. The field extends from 8 to 32 miles W., W.S.W., and W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. The centre is about *Lat.* 23° 50′ S., *Long.* 150° 55′ E.

DISCOVERY: Raglan Goldfield (included in Langmorn Goldfield), discovered 1867. In this year a 56-oz. nugget was found by Edward Longstaff.

POPULATION: Under 10.

PROCLAMATION: First gazetted 18th March, 1880; last, 6th March, 1913, as follows—Commencing at the confluence of the Horrigan and Raglan Creeks, and bounded thence by the Raglan Creek upwards easterly to the south-west corner of a reserve, R. 50, by the west and north boundaries of that reserve and a line east to the south-western boundary of a reserve for harbour purposes, R. 36, proclaimed in *Government Gazette,* 1894, volume 2, page 232, by the western boundary of that reserve northerly, the northern and eastern boundaries of Targinie Run easterly and south-easterly to the north-west corner of portion 1v, parish of Calliope, by the west boundary of that portion southerly to the railway line; thence by a line south to the southern watershed of Targinie Creek, by that watershed westerly, northerly, and south-westerly to the north-east corner of portion 487, parish of Targinie, by the east and south-east boundaries of that portion, the south-east boundaries of portions 466 and 1v, same parish, portions 22v and 20v, parish of Langmorn, a line south-westerly crossing the railway line to the north-east corner of portion 110, same parish, by the northern and western boundaries of that portion to the south-west corner of same; thence by a line westerly to the north-east corner of portion 33, parish of Mount Larcombe, by the northern boundary of that portion, the northern and western boundaries of portion 38, the western boundaries of portions 39, 40, and 41 westerly and southerly to the northernmost corner of M.H. 340, same parish, by the north-eastern boundary of that homestead south-easterly to the north boundary of a timber reserve, R. 63, proclaimed in *Government Gazette,* 1883, volume 2, page 1659, by part of the north, the east, and south-east boundaries of that reserve easterly, southerly, and south-westerly to the north-west corner of portion 36, Langmorn Gold and Mineral Field—*continued:*

same parish, by the west and south-western boundaries of that portion, the western boundary of portion 1v, same parish, south-easterly and south-westerly to portion 6v, parish of Alma, by part of the northern boundary of that portion and a range north-westerly, south-westerly, and again north-westerly to the south-east corner of portion 2, parish of Nolan, by the south and part of the west boundaries of that portion west and north-westerly to the northern watershed of the Calliope River, by that watershed and the northern watershed of the Don River, Manton and Centre Creeks west and north-westerly to the north-western watershed of the Langmorn Creek, by that watershed north-easterly to the southern boundary of Ulam Goldfield, by part of the south and part of the east boundaries of that goldfield northerly to Horrigan Creek; thence by that creek downwards to the south-west corner of portion 2v, parish of San Jose, by the south boundary of that portion easterly to the south-west corner of Raglan Town Reserve, R. 43, by the west boundary of that reserve northerly to Horrigan Creek; thence again by that creek downwards to the point of commencement;—exclusive of freeholds and agricultural farms.

Area: 192,000 acres (300 sq. miles).

Principal Mining Centres: Raglan and Targinie Goldfields, *which see.*

Mineral Statistics: Gold—*Included in* "Other Goldfields." *See maps and diagrams,* Pls. 36, 46, 46a, 47.

Mineral References: Gold (alluvial) 3386-3389, (nugget) 3445, (reef) 4296, 4297, 4311; Copper (Azurite) 247a, 248, 249; Bornite 435a, (Copper Pyrites) 2295, (Cuprite) 2474, (Malachite) 6359-6361; Iron (Limonite), 5908a; Limestone, 678, 724. Other Minerals—Kaolin, 5699.

Geological Note: The country rock consists chiefly of slates and quartzites. At Mt. Holly a thick bed of conglomerate forms a conspicuous feature, and at Raglan Creek large outcrops of limestone occur. Numerous quartz reefs are found in the shales, with diorite sometimes forming one of the walls. *See* G.S.Q. Pubs. 21 and 194 for details.

Geological Publications: Reports—Nos. 21 (1885), 194 (1904). *See under* Geol. Surv. Pub. List for title.

Warden: Stationed at Gladstone; Inspector of Mines: Stationed at Rockhampton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Langmorn (on hill near), 8 miles W. of Gladstone. *Min.Ref.* Limestone, *see* 678.

Lansdowne Lease Bores. *See under* Artesian Bores. No. 313.

Lanthanum (La.). *Atom.Wt.*, 139·0; *Sp.gr.*, 6·05. Occurs as a constituent of Monazite, *which see.*

Lapham (Torbanlea) Seam, Burrum Coalfield. *Min.Ref.* Coal, *see* 1809.

Lapis Lazuli is not known to occur in the State, but "False lapis lazuli" has been found. *See* Lazulite.

Lappa Junction Rail. Stn. (Chillagoe and Mt. Garnet line), 102 miles (by rail) S.W. of Cairns. *See* Pl. 22. *Lat.*, 17° 23′ S.; *Long.*, 144° 57′ E. *Railway Base* for Sunnymount Tin Mines, comprising the Tommy Burns, King of the Hills, and Cabbage Patch Mines.

Mineral References: Argentite, *see* 96; Bismutite, 394; Cassiterite, 952; Cerargyrite, 1182; Cerussite, 1202; Chalcolite, 1407; Native Copper, 1993; Galena, 2801, 2802; Lead Ore, 5724a; Molybdenite, 6839; Silver, 7462; Silver Ore, 7563; Topaz, 7788; Tourmaline, 7855; Wolfram, 7970.

—— Wolfram Lode, 2½ miles S.S.W. of Lappa Rail. Stn. (Chillagoe line). *Min. Ref.* Native Bismuth, *see* 341; Bismutite, 394; Cassiterite, 949; Chalcolite, 1407; Molybdenite, 6839; Topaz, 7788; Wolfram, 7969, 7970.

Lara (Quarrell's) Bore. *See under* Artesian Bores. No. 325.

Lardyda Reef, Oakey Cr., Normanby Goldfield. *Min.Ref.* Gold, *see* 4129.

Lass o' Gowrie Mines, 1 mile N. of Stannary Hills Rail. Stn. (br. of Chillagoe line). *Min.Ref.* Cassiterite, *see* 852; Fluorspar, 2660; Stannite, 7595.

Last Call Mine, Martin's Cr., Cloncurry Goldfield. *Min.Ref.* Gold, *see* 3468; Iron Pyrites, 4932.

—— Chance Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4299; Iron Pyrites, 5395.

—— —— Reef, New Zealand Gully, Cawarral Goldfield. *Min.Ref.* Cerargyrite, *see* 1185; Gold, 4328.

—— —— ——, Tabletop, Croydon Goldfield. *Min.Ref.* Gold, *see* 3547.

—— —— ——, Jessop's Hill, Palmer Goldfield. *Min.Ref.* Gold, *see* 3670.

—— Hit Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

—— —— ——, Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3667; Iron Pyrites, 5026; Silver, 7448.

—— Kick Tin Mine, Bakerville. *Min.Ref.* Cassiterite, *see* 841.

Laumonite. *Compo.*, Hyd. silicate of alumina and lime. *Colour*, usually whitish. Somewhat pearly. *H* = 3·5-4. *Sp.gr.* = 2·2-2·3. A zeolite.

5718. ——. In altered igneous rock. *Loc.* Bowen R., about 50 miles S.W. of Bowen. *Co.* Salisbury; *Dist.* **Kennedy North.**

5719. ——. Pelican Cr., br. of Bowen R., 50 miles S.W. of Bowen (*ante*). *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

5720. ——. Strathmore Cr., br. of Bowen R., 55 miles S.W. of Bowen (*ante*). *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

5721. ——. *Assoc.with* Calcite, Chalcedony, and Agate, in basic rock. *Loc.* Nr. McGregor, 2½ miles N.E. of Mt. Toby, 2½ miles N.N.E. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 164, p. 15 (1901).

Laun (E. J.), Assistant Inspector of Mines.
On Some "Outside" Mines, Charters Towers. Q.G.M.J., vol. 12, pp. 120-122 (1911).

Launoka Doudou (Mayri Bay), Brit. New Guinea. *Min.Ref.* Limestone, *see* 704.

Laura (on Cooktown Railway Line).

Situation: *See maps*, Pls. 8, 9. Sixty-seven miles (by rail) W.byS. of Cooktown. *Co.* Banks; *Dist.* Cook. *Lat.*, 15° 12′ S.; *Long.*, 144° 20′ E.

Railway Base for the gold mines at Palmerville, Maytown, and Limestone; Palmer Goldfield; Little River Coalfield; and the tin mines and alluvial workings at Cannibal and Granite Creeks.

Mineral References: Cinnabar, *see* 1542; Garnet, 3097; Pleonaste, 7584; Psilomelane, 7083; Pyrolusite, 7116; Stibnite, 7616.

Geological Note: The rocks in this area belong to the Ipswich Series (Trias-Jura), and contain several important coal seams. *See* G.S.Q. Pub. No. 70 for details.

Laura Vale Sub-artesian Bore. *See under* Artesian Bores. No. 272.

Lawn Hills Silver Lead Mines, Mended Hill, S.W. of Burketown. Centre about *Lat.* 18° 28′ S.; *Long.* 135° 12′ E.

Mineral References: Calcite, *see* 451; Cerussite, 1885a and 1186; Galena, 2692-2697; Hematite, 4676; Lead Gossan, 5728; Silver, 7424b; Zinc Blende, 8052 and 8053. *See also under* Gov. Ming. Jour., Special Reports, No. 6.

Geological Note: The rocks in this locality comprise sandstones, shales, and mudstones of Silurian Age. They have been disturbed by enormous faults, along which quartz reefs have formed, and in which large masses of galena have been deposited. *See* G.S.Q. Pub. 138 for details.

Geological Publications: Reports Nos. 138 (1900) and 232 (1911). *See under* Geo. Sur. Pub. List for title.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 283.

Lazulite. *Compo.*, Phosphate of Alumina, iron, and magnesia. *Colour*, azure blue. *Streak*, white. Brittle. *H.* = 5·6. *Sp.gr.* = 3·1.

5722. —— (?). As small masses in grey rock in red granite. *Loc.* Left bank, near source of Chillagoe Creek, near Timbered Hill, 6 miles S.byW. of Calcifer Rail. Stn., 138 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* G.S.M.

"L" Creek Bore. *See under* Artesian Bores. No. 297.

Le Breun Lakes. *See* Coalstoun Lakes.

Lead (Pb.). *Atom.Wt.*, 207·10. *Sp.gr.*, 11·3.

MINERALS: *See* Altaite, Anglesite, Bournonite, Cerussite, Galena, "Lead Gossan," "Lead Ochre," "Lead Oxide," Linarite, Massicot, Matlockite, Mimetite, Minium, Pyromorphite, Wulfenite.

ASSOCIATED MINERALS: *Include* Actinolite, Barytes, Calcite, Chlorite, Ferrocalcite, Fluorspar, Garnet, Graphite, Gypsum, Hornblende, Kaolin, Mica, Steatite, etc.; Galena and other lead-bearing minerals, Bismuthinite, Bornite, Cassiterite, Cerargyrite, Copper Pyrites, Gold, Iron Pyrites, Marcasite, Mispickel, Molybdenite, Proustite, Pyrargyrite, Pyrolusite, Silver, Stibnite, Tetrahedrite, Wolfram, Zinc Blende. Most of the above minerals occur in association with galena or with minerals resulting from its oxidation.

ASSOCIATED ROCKS: *Gangues: Include* calcite, felspar, fluorspar, garnet, mica, ironstone, kaolin, quartz, quartzite, steatite. *Country rocks: Include* chlorite, diorite, garnet rock, gneiss, granite, greisen, greywacke, limestone, porphyry, sandstone, schist, serpentine, shale, slate, syenite, tuff.

GEOLOGICAL NOTE: Lead-bearing deposits occur as defined lodes and irregular masses in limestone, slate, and other sedimentary rocks, also in granite, diorite, etc., all belonging to Permo-Carboniferous or older formations. A large lode, of some importance, occurs at Lawn Hills, Burketown Mineral Field, in Silurian rocks, whilst important mines are situated in the Chillagoe District, Texas, and Ballandean, and smaller ones at Sellheim Mineral Field, Star R. Mineral Field, and Bompa. *See* G.S.Q. Pubs. Nos. 26, 57, 134, 191, and 232 for details.

STATISTICAL NOTE: *See under* Silver, sub-heading Silver-lead.

FIELDS: *See under* Silver, sub-heading Silver-lead Fields.

VALUES: *See* Table *under* Metal Values in London for maximum and minimum prices for all years since 1892.

SMELTING WORKS: *See under* separate heading "Smelting Works in Queensland."

MAPS: Pls. 3, 7, 9, 13, 17, 21.

BIBLIOGRAPHY: *See under* Silver-lead.

5723. ——. *Assoc.with* Gold, Silver, Iron Pyrites, and Magnetite, in lode. *Loc.* Hannan's Silver-Lead Lode N.E. of Allendale Mine, Chowey Cr., 62 miles W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Contents: See* No. 3568. *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

5723A. ——. *Assoc.with* Silver. *Loc.* nr. Wigton Head Stn., Woroon, 21 miles S. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* Burnett. *Ref.* O.R.

5724. ——. *Assoc.with* Silver. *Loc.* Mountain Maid Silver Mine, 5 miles S. of Montalbion, 12 miles S.S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 49 (1900).

5724A. ——. *Assoc.with* Silver. *Loc.* Better Luck Mine, Lappa Junction Rail. Stn. (Chillagoe-Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 33, 50 (1897).

5725. ——. *Assoc.with* Silver and Copper (ore). *Loc.* Schlumacher's Mine, Newellton (Silver Valley), 10 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

5725A. ——. *Assoc.with* Silver. *Loc.* Andromache R., 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* A.R.D.M., pp. 14, 110 (1896).

5726. ——. *Assoc.with* Silver. *Loc.* Sellheim Silver Field Mines, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 57, pp. 2-7 (1889).

5727. ——. *Assoc.with* Gold, Silver, and Bismuth, in clay. *Loc.* Mt. Langan, nr. Blackbutt, 32 miles N.W. of Esk Rail. Stn., 71 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Assay: See* No. 7507. *Ref.* A.R., pp. 64, 65 (1906).

—— antimony-copper sulphide. *See* Bournonite.

—— (argentiferous). *See* Galena.

—— arsenate. *See* Mimetite.

—— carbonate. *See* Cerussite.

5728. **Lead Gossan.** *Assoc.with* Calcite and Zinc Blende, in lode in sandstone. *Loc.* Watson's Lode, Lawn Hills, 92 miles S.W. of Burketown. *Co.* Gregory; *Dist.* **Burke.** *Ref.* G.S.Q. Pubs. 138, p. 3 (1900), and 232, p. 50 (1911).

5729. —— ——. *Assoc.with* Minium, Ironstone, and Quartz, in mica-schist. *Loc.* Morrison's Sel. (166), Star R. (Argentine) Silver Field, 50 miles (by coach) N.W. of Ravenswood Junction (Gt. Northern line), 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

Lead molybdate. *See* Wulfenite.

5730. **Lead Ochre.** *Assoc.with* Cerussite and Ironstone, in lode. *Loc.* Excelsior Silver Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction (Gt. Northern line). *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

5731. —— ——. *Assoc.with* Cerussite and Galena. *Loc.* Silver Sel. (169), Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

5732. —— ——. *Assoc.with* Galena and Ironstone, in gossan lode. *Loc.* Southern Cross Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26 p. 5 (1886).

—— ——. *See also* Massicot, Minium.

—— oxides. *See* Massicot (yellow), and Minium (red).

—— oxy-chloride. *See* Matlockite.

—— phosphate. *See* Pyromorphite.

—— sulphate. *See* Anglesite, Linarite.

—— sulphides. *See* Galena. *See also* Bournonite.

—— telluride. *See* Altaite.

—— values in London *See under* Metal Values.

Lease Plans of Mining Areas. Official copies are kept of all lease plans, of which inspection is allowed on applying to Mines Department, Brisbane, or at Branch Offices in Mining Districts. Charge for Inspection, 2s. 6d.

—— rents. *See under* Rents for Time of Payment. *See* copy of "Mining Act" for fees charged.

Lee-Bryce (W. M.), Warden.
Special Report on Coen Goldfield. Q.G.M.J., vol. 2, p. 130 (1901).
Report on Hamilton and Coen Goldfields. Q.G.M.J., vol. 2, p. 432 (1901).
Report on Alice R. Gold Discovery. Q.G.M.J., vol. 4, p. 548 (1903).

Leed's (Airlie) Bore. *See under* Artesian Bores. No. 211.

Lee's Manganese Outcrop, 1 mile N.E. of Targinie Township. *Min.Ref.* Manganese-dioxide, *see* 6472.

Leichhardt Bore. *See under* Artesian Bores. No. 142.

Leichhardt District—

Situation: *See maps,* Pls. 10, 11. (*Lat.* 21°-27°; *Long.* 146°-151°). Bounded by the districts of South Kennedy on the N. and N.W., Port Curtis and Burnett on the E., and Darling Downs, Maranoa, Warrego, and Mitchell on the S. and S.W. The whole of the district is drained by the Fitzroy R. and its tribs., the Dawson, Mackenzie, Isaacs, Comet, Nogoa, and Connor Rivers.

Area: 48,354 sq. miles.

Principal Mining Centres: Gold and Mineral Fields—Clermont (*in part*), Anakie (gems), Nebo (*in part*), Mt. Flora, Mt. Orange, and Yatton, *which see.* Coalfield—Clermont, *which see.*

Counties:

Aberdeen Co. Bauhinia Co. Buckland Co. Cairns Co. Claude Co.

Clermont Co. Clermont Goldfield (*principal part—see also under* Kennedy North Dist.). Clermont Coalfield (Collieries—Baslet's, Blair Athol, Blair Athol Ext., Blair Athol North, Eldorada, Hope, Imbell, Mercer's, and Newcastle); Anakie Sapphire Field (*in part—see also* Plantaganet Co.).

Consuelo Co.

Dawson Co. Camboon.

Denison Co. Emerald, Springsure, Woolthorpe, Woolton.

Leichhardt District—*continued:*

Ferguson Co. Banana.

Fortescue Co. Grosvenor Co.

Humboldt Co. Blackwater (Coal), Cometville, Dingo, Springton, Tolmies (Coal).

Killarney Co. Collaroy (Silver), Yatton Goldfield, Mt. Flora (Copper), Mt. Orange (Copper).

Kimberley Co. Duaringa, Walleroo (Coal).

Labouchere Co.

Leura Co. Balcoomba (Copper).

Pakington Co. (*in part—see also under* Port Curtis Dist.). Boolburra (Coal), Rannes (Gold).

Plantagenet Co. Anakie Sapphire Field (*in part—see also* Clermont Co.).

Roper Co.

Talbot Co. Capella (Coal).

Tingarra Co. Westgrove Co.

Wodehouse Co. Nebo Goldfield (*in part—see also under* Kennedy South Dist.).

Wooroona Co.

Mineral References and Statistics: *See under* names of Principal Mining Centres.

Leichhardt Prov. Goldfield. Was once included in the Bower Bird Goldfield, now included in the Cloncurry Gold and Mineral Field.

Leichhardt R. (Cloncurry Mineral Field), heads at Selwyn Range, 65 miles S.W. by W. of Cloncurry, and flows N. into Gulf of Carpentaria. Tribs., Gunpowder Cr., Alexandra R. Copper mines in this area include Mighty Atom, Jessie's Dream, and Mt. Cuthbert Groups. *Min.Ref.* Azurite, *see* 171; Chrysocolla, 1512-1515; Copper Pyrites, 2108-2111, 2115-2120; Cuprite, 2411B-2416; Epidote, 2591A; Gold (alluvial), 3184-3188; Hematite, 4675; Ironstone, 5505-5507; Jasper, 5635, 5636; Limonite, 5812-5826; Malachite, 6076, 6088, 6174-6184; Porcellanite, 5660; Redruthite, 7025, 7262-7273; Tile Ore, 2531-2537, 2540-2543.

Leilavale Sub-artesian Bore. *See under* Artesian Bores. No. 255.

Leinster Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 907; Ironstone, 5524.

Leishman's William Tell Mine, Paradise Goldfield. *Min.Ref.* Gold, *see* 3614; Iron Pyrites, 5003.

Leixlip Cr., Calliope Goldfield. *Min.Ref.* Gold (alluvial), *see* 3383.

Lemon's Cr., Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

Lennox Co. Wide Bay Dist. *See map,* Pl. 4.

Lenton Downs Run, on Isaacs R., 80 miles W.byS. of Mackay. *Lat.,* 21° 36′ S.; *Long.,* 147° 55′. *Min.Ref.* Coal, *see* 1684.

Leo's Flat Lead, Clermont Goldfield. *Min.Ref.* Gold (alluvial, *see* 3322.

Leonard's Gully, The Springs, Clermont. *Min.Ref.* Gold (alluvial), *see* 3342.

Lepidolite. *Syn.* Lithia Mica. *Compo.,* Silicate of alumina, with traces of lithia. *Colour,* rose-red, violet, grey. *H.* = 2·5-4; *Sp.gr.* = 2·8-3·0; *See* note under Lithium.

5733. ——. In greisen. Mt. Barunda, Tate R., Walsh and Tinaroo Mineral Field. *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

Lerida Bores. *See under* Artesian Bores. No. 314.

Leswalt Selection Sub-artesian Bore. *See under* Artesian Bores. No. 344A.

Leucoxene. *Syn.* Sphene, *which see.*

Leura Co. Leichhardt Dist. *See map,* Pl. 10.

Levant Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1096; Fluorspar, 2675; Iron Pyrites, 5139.

Leviathan Group of Copper Mines, Martin Cr., Cloncurry. *Includes* Leases Nos. 383, 384, 385, 412. *Min.Ref.* Copper Ore, *see* 2018B.

—— Mine, Clermont Goldfield. *Min.Ref.* Gold, *see* 4150A; Hematite, 4764.

—— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1097; Fluorspar, 2676; Iron Pyrites, 5140; Wolfram, 8020.

Leyburn Goldfield—

SITUATION: *See maps,* Pls. 12, 13. 28 miles W.byN. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. Centre about *Lat.* 28° 0′ S.; *Long.* 151° 40′ E.

DISCOVERY: In 1882, by T. Prusson.

PROCLAMATION OF FIELD: First (and only one) gazetted, 21st June, 1875, as follows:—Commencing on the main road from Warwick to Leyburn at its intersection with the east boundary of the Leyburn Town Reserve, and bounded thence on the west by that boundary and a line bearing south about 2 miles 70 chains to the north boundary of Selection 118; on the south by part of that boundary, the north boundary of Selection 416, and a line bearing east about 3 miles 5 chains to a point bearing south from the south-west corner of Selection 1090; on the east by a line and part of the west boundary of Selection 1096, and bearing north about 2 miles 55 chains to the above-mentioned road from Warwick to Leyburn, and on the north by the south side of that road westerly to the point of commencement.

AREA: 4,780 acres (7$\frac{15}{32}$ sq. miles).

MINERAL STATISTICS: Gold, *included in* "Other Goldfields," Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: Gold, 3844-3846; Copper (Pyrites), 2197; Manganese (Pyrolusite), 7121; Iron (Pyrites), 5120. Other Minerals—Clay, 1571; Talc, 7676.

GEOLOGICAL NOTE: The rocks consist of slates, grits, quartzites, greywackes, tuffs, and limestones belonging to the Gympie Formation, of Permo-Carboniferous Age. A few quartz reefs have been exposed on the field, all well-defined and carrying gold.

GEOLOGICAL PUBLICATIONS: Report—No. 120 (1898). *See under* Geol. Surv. Pub. List for title.

WARDEN: Stationed at Warwick; INSPECTOR OF MINES: Stationed at Gympie.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Liebig Co. Port Curtis Dist. *See map,* Pl. 2.

Lievrite. *Syn.* Ilvaite. *Compo.,* Silicate of iron and lime. *Colour,* blackish. *Lustre,* sub-metallic. *Streak,* blackish. *H.* = 5·5-6; *Sp.gr.* = 3·7-4·2.

5734. ——. *Assoc.with* Gold and Chrysocolla, in clayey talcose matrix. *Loc.* Agate Downs Goldfield, Tip Top Camp, Maggie's Cr., 50 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 104, p. 6 (1895), and G.S.M.

5735. ——. In geodes in basalt. *Loc.* Between Williams's and Brannigan's Stations, Endeavour R., nr. Cooktown. *Co.* Banks; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

5736. ——. *Assoc.with* Garnet, Manganese-dioxide, and Cerussite, in Queen Lode. *Loc.* Boomerang Lease (186), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

5737. ——. *Assoc.with* Cerussite, in Alpha lode. *Loc.* Day Dawn Lease (170), in Newton's Shaft, Kangaroo Hills Mineral Field (*ante*). *Assays:* (1) Silver = 57 oz. per ton, Lead = 67·5 per cent; (2) Silver = 4 oz. per ton, Gold = trace. *Ref.* G.S.Q. Pub. 82 (1892).

5738. ——. *Assoc.with* Galena, Cerussite, Malachite, Chrysocolla, Manganese-dioxide, and Garnet, in lode. *Loc.* Mt. Hishon Lease (210), Kangaroo Hills Mineral Field (*ante*). *Assay:* Lead = 22·3 per cent.; Silver = 2 oz. 20 gr. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

Light of Asia, Durham, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2753.

—— of Day Mine, Mt. Gilmore, Mt. Morgan Goldfield. *See* Pl. 35. *Min.Ref.* Gold, *see* 4368; Iron Pyrites, 5423.

Lighthouse Reef, Woodville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3764.

Lignite. *Syn.* Brown Coal, *see under* Coal. Nos. 1597, 1617A, 1693, 1708, 1719, 1795-1797, 1801, 1831-1833.

Lilleyman's (Hoolah) Bore. *See under* Artesian Bores. No. 270.

Lilleyvale Sub-artesian Bore. *See under* Artesian Bores. No. 181.

Lillie's Shaft, Kangaroo Hills Mineral Field. *Min.Ref.* Magnetite, *see* 6019.

Lily Bore. *See under* Artesian Bores. No. 195.

—— of the Valley P.C., Bower Bird Goldfield. *Min.Ref.* Gold, *see* 3460; Ironstone, 5486.

Lilydale Mine, Lawn Hills. *Min.Ref.* Cerussite, *see* 1185A; Galena, 2696.

Lilymere Lagoon, Jamie Hill, Alton Downs. *Min.Ref.* Coal, *see* 1792.

Lime carbonates. *See* Ankerite, Aragonite, Calcite, Dolomite.

Lime-Iron Garnet. *Syn.* Andradite, *var. of* Garnet, *which see.*

Lime Kilns and Quarries. (Principal)—

Raglan. On railway line, half-way between Gladstone and Rockhampton.
Silverwood. Four miles from railway, and about twelve miles from Warwick.
Glenmore. Near Fitzroy River, a few miles above Rockhampton.
Tamaree. At Tamaree Station, 5 miles from Gympie.
Gore. Four miles from Gore Rail. Stn., and 48 miles from Warwick.

Lime Manufacture. Most of the lime is utilised as a neutralising re-agent in the manufacture of sugar from cane juice; a small quantity also being used in building construction. Limestone deposits do not occur close to Brisbane, but at the places mentioned above, and also in many other localities, there are large areas of good limestone from which lime of first-class quality could be made. Limestone does not occur near Mackay, so far as official records show, but the islands to the south-east—Iron, Mortar, Marble, and Hunter—contain inexhaustible supplies. Townsville and Cairns, on the coast, are without limestone deposits, but limestone areas at Chillagoe are about 140 miles from the latter port.

See notes under Limestone and under Cement-making Materials.

Lime Mesotype. *Syn.* Scolecite, *which see.*

—— Carbonates. *See under* Calcite and Limestone.

—— Phosphates. *See* Apatite, Guano.

—— Silicates. *See under* Silicates.

—— Sulphate. *See* Gypsum.

—— Tungstate. *See* Scheelite.

Limekiln Beach, Hunter Is. *Min.Ref.* Galena, *see* 3066.

Limestone. *Var.* Calcite, *which see.*

MINERAL NOTE: In many localities massive limestone is found associated with deposits of iron, copper, bismuth, and zinc, and where near granite gives rise to a series of alteration products, of which garnet is the principal. The immense iron deposits of Iron and Marble Islands near the coast north of Rockhampton, and the iron-bismuth lode of Mount Biggenden, are in limestone country, and numerous copper and zinc lodes commonly have limestone as the gangue or country rock. Many limestone deposits occur in Central and Northern Queensland near the coast, and they have been proved to contain, in many cases, limestone of very pure quality, quite suitable for making lime or cement, or for fluxing purposes in metallurgical operations. Coloured and white marble of fine quality exists on Marble and Iron Islands between Rockhampton and Mackay, and a dark limestone with large white encrinites is being quarried at the limestone deposits near Marmor Railway Station. At Calliope, near Gladstone, a brecciated limestone has been worked to some extent, and, judging from what has been produced, the quarry should yield a remarkably fine brecciated red and pink marble suitable for cutting into slabs.

GEOLOGICAL NOTE: Nearly all the Limestones in the State are Palæozoic, belonging generally to the Permo-Carboniferous, Devonian, or Silurian Systems. Some deposits are irregularly lens-shaped coral formations, and unconformable with adjacent formations, but usually the limestones are evenly bedded, and interstratified with slates, shales, sandstones, and other sedimentary rocks. A large belt of limestone country exists on the N.W. boundary of the State, which was once considered to be all Palæozoic, but which now appears to be partly Devonian and partly Tertiary. *See maps,* Pls. 3, 5, 9, 17; *also* G.S.Q. Pub. No. 194.

ANALYSES: *See under* Calcite. *Sub-head,* Limestone.

USES: *See* note under Calcium.

STATISTICS: *See tables and diagram,* Pls. 41, 45, 46-46A, 53.

—— Cr. Flows into Fitzroy R., 12 miles N.W. of Rockhampton. *Min.Ref.* Copper carbonate, *see* 1959.

—— Extd. Mine (1 mile N. of), S. of Cloncurry. *Min.Ref.* Asbestiferous Actinolite, *see* 4862.

—— Hill, Ipswich. *Min.Ref.* Chalcedony, *see* 1354; Chert, 1413; Hornstone, 1393; Limestone, 665; Magnesite, 5955.

—— ——. The Spring, Clermont. *Min.Ref.* Dolomite, *see* 2589; Gold (alluvial), 3343.

——. *See also under* Calcite. Nos. 447, etc., for mineral references.

Limestone Group of Reefs, Palmer Goldfield. *Includes* Anglo-Saxon, German Miner, Good Hope, North Cross, and South Gold Reefs. *Min.Ref.* Gold, *see* 3673-3677; Hematite, 4704; Iron Pyrites, 5027; Manganese-dioxide, 6403; Mispickel, 6673, 6674.

Limestone and Dolomite Analyses—

Locality.	Mineral Index. Ref. No.	Moisture.	Loss on Ignition.	Silica.	Iron Oxide.	Alumina.	Lime.	Magnesia.	TOTAL.
		%	%	%	%	%	%	%	%
Ambrose	679A	0.1	42.6	1.0	0.5	0.7	55.1	0.1	100.1
Biggenden (Morish's) ..	625	Nil	41.7	2.8	0.9	1.1	53.0	0.1	99.6
,, (Morish's South)..	625	0.1	37.0	10.1	1.5	3.8	46.1	0.6	99.2
,, (Watson's) ..	625	0.1	39.3	6.7	1.0	2.2	48.9	0.6	98.8
Curra	697	Nil	40.5	5.1	0.8	0.8	51.1	0.2	98.5
Daylsford (Mt. Perry Line)	693	1.5	43.3	5.1	3.4		46.9	trace	100.25
Flinders, Selection 102 ..	664A	0.2	43.9	4.2	0.8	2.1	28.6	19.9	99.7
,, Selection 100 ..	664A	0.4	42.5	6.5	0.9	4.5	28.4	16.7	99.9
,, Selection 100 (hole)	664A	0.8	40.0	11.7	1.2	3.8	26.1	16.1	99.7
,, Selection 17 ..	664A	1.2	38.8	14.8	1.3	1.3	24.0	18.4	99.8
Glenmore (Rockhamption)..	682A	0.1	42.5	1.5	0.3	0.7	53.9	0.5	99.5
Gore	648A	Trace	43.4	0.4	0.1	0.1	55.9	Nil	99.9
Gympie Cemetery (1) ..	698A	..	..	37.6	3.1	4.0	..	..	..
,, ,, (2) ..	698A	..	..	35.0	1.1	2.1	..	..	..
,, ,, (3) ..	698A	..	..	28.1	1.4	2.5	..	..	..
Ipswich (Limestone Hill) ..	665	0.4	43.8	5.7	0.9	1.1	27.5	20.6	100.0
Malchi Creek (Rockhampton)	539	1.0	42.1	2.9	Trace	0.8	52.0	1.2	100.0
Mortar Island	689	..	42.9	1.88	0.74		54.6	..	..
Mount Etna (near hotel) ..	685	0.2	42.1	1.7	0.3	0.9	54.1	0.3	99.6
,, (Olsen's Caves)	685	0.2	41.6	2.5	0.3	1.2	53.8	0.2	99.8
Mundubbera (96¾ mile) ..	624A	Trace	43.4	0.3	Trace	0.2	56.0	Nil	99.9
Raglan (Grey's No. 1 old) ..	679	Nil	42.9	0.9	0.2	0.5	55.0	0.2	99.7
,, (Grey's No. 2 new)..	679	Nil	42.8	0.8	0.1	0.2	55.4	0.1	99.4
,, (McDonald's Hill) ..	679B	Nil	38.8	8.1	1.2	2.4	49.0	0.6	100.1
Silverwood (Lock's) ..	647	Nil	42.6	0.9	0.3	0.6	54.2	0.2	98.8
,, (Reeve's) ..	647	0.1	42.6	0.8	0.3	0.9	54.1	0.2	99.0
Tamaree (working)	698	Nil	42.1	2.6	0.3	0.8	53.3	0.4	99.5
,, (idle)	698	..	36.3	13.5	0.9	1.7	45.5	0.4	98.3
,, (blue rock) ..	698	0.2	32.2	21.8	1.3	2.6	40.5	0.5	99.1
,, (3 miles S.W.) ..	698	0.3	23.1	38.0	2.1	4.8	29.6	0.1	98.0

Limestone in Artesian Bores. *See* Artesian Bore Tables, Nos. 157, 204, 224, 232, 342 (2, 3), 289 (4), 432.

—— Mining Centre, Palmer Goldfield. *Min.Ref.* Gold (alluvial), *see* 3205, (reef) 3673-3677.

—— Range, W. of Double Barrel Cr., S. of Townsville. *Min.Ref.* Garnet, *see* 3124; Gold, 3996; Hematite, 4736; Iron Pyrites, 5226; Malachite, 6287.

—— ——, nr. Palmerville, Palmer Goldfield. *Min.Ref.* Scheelite, *see* 7340.

Limonite. *Syn.* Brown Hematite, Brown Iron Ore. *Compo.*, Hyd. sesquioxide of iron. *Colour and Streak*, brownish, yellowish. *H.* = 5-5·5. *Sp.gr.* = 3·6-4. *Contents* (*max.*), Iron 59 per cent.

5739. ——. *Assoc.with* Copper Pyrites and Redruthite. *Loc.* 4 miles N.W. of Blackeye Spring, McKinlay, 68 miles S.E.byE. of **Cloncurry.** *Co.* Allison; *Dist.* **Burke.** *Ref.* A.R., p. 107 (1907).

5740. ——. *Assoc.with* Iron Pyrites. *Loc.* 4 miles N.W. of Blackeye Spring, McKinlay (*ante*). *Ref.* A.R., p. 107 (1907).

5740A.——. *Assoc.with* Copper Pyrites, Chrysocolla, and Malachite, in quartz and slate. *Loc.* Cameronian M.C. (196) (Euston Group), Cameron R., 27 miles W.N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 267 (1908).

5740B.——. *Assoc.with* Copper Pyrites, Malachite, and Azurite, in quartz and quartzite. *Loc.* Federal R.C. (52) (Federal Group), Cameron R., 20 miles W.N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 267, 268 (1908).

5741. Limonite. *Assoc.with* Malachite, in gossan and slate. *Loc.* Dispute M.L. (696) (Lady Clayre Group), Dugald R., 36½ miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 282 (1908).

5742. ——. *Assoc.with* Tile Ore and Malachite, in slate, gossan, and quartz. *Loc.* Lady Clayre M.L. (279) (Lady Clayre Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 279, 280 (1908).

5743. ——. *Assoc.with* Copper Pyrites, Tile Ore, Azurite, and Malachite, in mica-schist, quartzite, and gossan. *Loc.* Magnet M.L. (450) (Longamundi Group), Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 285 (1908).

5744. ——. *Assoc.with* Native Copper, Cuprite, and Malachite, in schist and gossan. *Loc.* Two Sports M.F. (2874) (Longamundi Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 288 (1908).

5744A. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Actinolite, in gossan and schist. *Loc.* Melba M.L. (319), Melba Group, Corella R., 39 miles W.S.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 210 (1908).

5745. ——. *Assoc.with* Redruthite and Malachite, in quartzite, schist, and gossan. *Loc.* Ruth M.L. (335), Mt. Remarkable Group, Glenroy, Prospector Cr., Leichhardt R., 51 miles W.N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 291 (1908).

5746. ——. *Assoc.with* Cuprite and Malachite, in gossan and kaolin. *Loc.* Una M.L. (280) (Una Group), 8 miles W. of Quamby, Dugald R., 33 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* A.R., p. 116 (1907), and G.S.Q. Pub. 215, p. 277 (1908).

5747. ——. *Assoc.with* Gold, Iron Pyrites, and Hematite. *Loc.* Gilded Rose Mine, Bishop's Cr., 11 miles E.S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 15 (1885), 104, p. 3 (1895).

5748. ——. *Assoc.with* Native Copper, Cuprite, and Malachite, in quartzite, schist, and gossan. *Loc.* M.F. (14) (Great Australia Group), 1½ mile N.N.E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 251 (1908).

5748A. ——. *Assoc.with* Redruthite, Cuprite, Tile Ore, Chrysocolla, and Malachite, in quartz and quartzite. *Loc.* Rocklands Group of Copper Mines, between Butcher and Morris Crs., 9 miles W. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 258-265 (1908).

5748B. ——. *Assoc.with* Cuprite, Tile Ore, Redruthite, and Malachite, in gossan and quartzite. *Loc.* Chum M.C. (329) (Serpent Hill Group), Morris Cr., 4½ to 5½ miles W.S.W. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 256 (1908).

5748C. ——. *Assoc.with* Cuprite, Tile Ore, and Malachite, in lode. *Loc.* Carlton Hills Run, 78 miles N.W.byW. of Cloncurry. *Co.* Brahe; *Dist.* Burke. *Ref.* A.R., p. 269 (1910).

5749. ——. *Assoc.with* Copper Pyrites, Redruthite, and Tile Ore, in slate (?). *Loc.* Eclipse M.L. (571) (Eclipse Group), E. of Dromedary Range, N.W. of Donaldson, 68 miles N.byW. of Cloncurry. *Co.* Granada; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 355, 356 (1908).

5750. ——. *Assoc.with* Copper Pyrites, Malachite, and Calcite, in gossan and quartz. *Loc.* Iron Duke M.L. (Alice Group), Duck Cr., 4 miles S.E. of Mt. Start, 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 165, 166 (1908).

5751. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Chrysocolla, Hematite, and Turgite, in quartz, calcite, and gossan. *Loc.* Belfast M.L. (303) (Belfast Group), 2 miles N.N.E. of Mt. Start, 21 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 120-122 (1908).

5752. ——. *Assoc.with* Redruthite, Malachite, and Azurite, in quartz and schist. *Loc.* Boomerang M.C. (162) (Boomerang Group), W. side of Cone Cr., Duck Cr., 2 miles N.N.W. of Mt. Start, 23 miles W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 99, 100 (1908).

5753. ——. *Assoc.with* Copper Pyrites, Tile Ore, Redruthite, Chrysocolla, and Hematite, in quartz and ferro-calcite. *Loc.* Policeman M.C. (2061) (Boomerang Group) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 100, 101 (1908).

5754. ——. *Assoc.with* Malachite, in schist, quartzite, and quartz. *Loc.* Chinaman M.F. (2453) (Chinaman Group), Duck Cr., 1 mile S.byE. of Mt. Start, 23½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 144-147 (1908).

5755. ——. *Assoc.with* Redruthite, Malachite, and Göthite, with traces of gold and silver, in schist and quartz. *Loc.* Mountain Maid M.L. (526) (Columbiad Group), Duck Cr., 1¼ mile S.W. of Mt. Start, 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 140, 141 (1908).

5756. ——. *Assoc.with* Redruthite, Tile Ore, Cuprite, and Malachite, in quartz and schist. *Loc.* Butterfly M.L. (496) (Daisy Group), Duck Cr., nr. Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 109, 110 (1908).

5757. ——. *Assoc.with* Gold, Copper Pyrites, Redruthite, Tile Ore, Cuprite, Malachite, Iron Pyrites, Calcite, Actinolite, Chlorite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155) (Daisy Group) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

5758. ——. *Assoc.with* Malachite and Hematite, in quartz and schist. *Loc.* Horseshoe M.L. (451), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 104, 105 (1908).

5759. ——. *Assoc.with* Malachite and Actinolite, in quartz and chloritic schist. *Loc.* Tulip No. 1 E. M.C. (180), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 106 (1908).

5760. ——. *Assoc.with* Redruthite, Tile Ore, and Malachite, in chloritic schist and quartz. *Loc.* Balfour Extd. M.C. (257) (Diagonal Group), Duck Cr., nr. Mt. Start, 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 138, 139 (1908).

5761. ——. *Assoc.with* Gold, Copper Pyrites, Redruthite, Tile Ore, Azurite, and Malachite, in chloritic schist. *Loc.* Pioneer Copper M.L. (229) (Diagonal Group) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 132-135 (1908).

5762. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Malachite, in schist and quartz. *Loc.* Prospector M.C. (182) (Diagonal Group) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 136-138 (1908).

5763. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Azurite, Iron Pyrites, and Calcite, in schist, slate, and quartz. *Loc.* Eva M.L. (250) (Eva Group), 1¼ mile S.E. of Mt. Start, 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 152-154 (1908).

5764. ——. *Assoc.with* Malachite and Hematite, in quartz. *Loc.* Jessie M.L. (238), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 156, 157 (1908).

5765. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Malachite, Chrysocolla, Iron Pyrites, Turgite, Calcite, and Ferro-calcite, in quartzite, schist, and limestone. *Loc.* Florence R. Copper Mines, ½-mile W. of Hampden Rd., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 69-78 (1908).

5766. ——. *Assoc.with* Redruthite, Cuprite, and Malachite, in slate and gossan. *Loc.* Block (15), M.Ls. (246 and 409) (Hampden Group), 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 60, 61 (1908).

5767. ——. *Assoc.with* Calcite and Chlorite, in quartz. *Loc.* Block (25), M.L. (421) (Hampden Group) (*ante*). *Ref.* G.S.Q. Pub. 215, p. 62 (1908).

5768. ——. *Assoc.with* Malachite, in gossan. *Loc.* Hampden South M.L. (502) (Hampden Group) (*ante*). *Ref.* G.S.Q. Pub. 215, p. 63 (1908).

5769. ——. *Assoc.with* Hematite. *Loc.* Mt. Sylvia Copper M.L. (422), 1½ mile S.E. of Hampden Workings, 42 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Assay:* Iron Oxide = 87·87 per cent. *Ref.* G.S.Q. Pub. 215, p. 62 (1908).

5770. ——. *Assoc.with* Copper Pyrites, Tile Ore, Azurite, and Malachite, in schist and quartz. *Loc.* Comet M.L. (243) (Hilda Group), ½-mile W. of Boulia Road, nr. Gorge Hotel, 20 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 182, 183 (1908).

5771. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Manganese-dioxide, and Calcite, in limestone, quartz, and schist. *Loc.* Hilda M.L. (242), Hilda Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 183, 184 (1908).

5772. ——. *Assoc.with* Tile Ore, Cuprite, and Malachite, in quartz. *Loc.* Adelaide M.C. (549) (Just-in-Time Group), 1¼ mile S. of Malbon R., 30 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 85, 86 (1908).

5773. ——. *Assoc.with* Redruthite, Tile Ore, and Malachite, in ferruginous quartzite and schist. *Loc.* Just-in-Time M.L. (237) (Just-in-Time Group) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 82, 83 (1908).

5774. ——. *Assoc.with* Copper Pyrites, Redruthite, and Malachite, in quartzose schist. *Loc.* Just-in-Time M.L. 1 E. (473), Just-in-Time Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 84 (1908).

5775. Limonite. *Assoc.with* Redruthite, Tile Ore, Cuprite, and Malachite, in slate, quartzite, and quartz. *Loc.* Malbon M.F. (2548), Just-in-Time Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 79-81 (1908).

5775A.——. *Assoc.with* Redruthite, Malachite, and Chrysocolla, in quartzite and schist. *Loc.* Lady Jenny M.L. (234) (Lady Group), Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 195 (1908).

5775B.——. *Assoc.with* Redruthite, Tile Ore, Azurite, and Malachite, in quartz and schist. *Loc.* Morning Star M.L. (306), Lady Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 199 (1908).

5776. ——. *Assoc.with* Native Copper, Cuprite, Redruthite, Malachite, Chrysocolla (*var.* Cyanochalcite), Calcite, and Ferro-Calcite, in granular limestone. *Loc.* Dandy P.A. (297) (McPhail Group), 2 miles S. of Florence R., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 76, 77 (1908).

5777. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Azurite, in silvery glance. *Loc.* Erin-go-Bragh Extd. M.C. (372), McPhail Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 77, 78 (1908).

5778. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Chrysocolla, in gossan, quartzite, and schist. *Loc.* McPhail M.L. (474) (McPhail Group) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 70-72 (1908).

5779. ——. *Assoc.with* Redruthite, Malachite, Chrysocolla, Iron Pyrites, and Dioptase, in turgite, schist, and gossan. *Loc.* Trump Extd. M.C. (368) (McPhail Group) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 73-76 (1908).

5780. ——. *Assoc.with* Tile Ore, Redruthite, Malachite, and Azurite, in schist, quartzite, and slate. *Loc.* Monitor M.L. (419) (Monitor Group), 44 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 65 (1908).

5780A.——. *Assoc.with* Gold, Native Copper, Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Göthite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.) (Mt. Wheeler Group), Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 219-224 (1908).

5780B.——. *Assoc.with* Redruthite, Malachite, and Iron Pyrites, in schist. *Loc.* Pearl M.C. (106), Pearl Group, Corella R., 30 miles W.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 188 (1908).

5781. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, Azurite, Chrysocolla, and Hematite, in slate. *Loc.* Easter Gift M.L. (290) (Pioneer Chief Group), 1 mile E. of Mt. Start, W. of Marabah, 24 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 127-129 (1908).

5782. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, Malachite, and Iron Pyrites, in slate. *Loc.* Pioneer Chief M.L. (231) (Pioneer Chief Group), E. bank of Cone Cr., ½-mile N. of Mt. Start, 24 miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 123-125 (1908).

5783. ——, *Assoc.with* Copper Pyrites and Malachite, in schist and quartz. *Loc.* Primrose Extd. M.C. (267), W.N.W. flanks of Mt. Finish, 24 miles S.W.byS. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 126, 127 (1908).

5784. ——. *Assoc.with* Tile Ore and Malachite, in chloritic schist and quartz. *Loc.* Coronet M.C. (241) (Ready Rhino Group), Cone Cr. and Duck Cr., 23½ miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 96 (1908).

5785. ——. *Assoc.with* Copper Pyrites, Redruthite. Malachite, Chrysocolla, and Turgite, in slate and quartz. *Loc.* Highland Mary M.L. (531), 2¾ miles N.W.byN. of Mt. Start, Ready Rhino Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 91-93 (1908).

5786. ——. *Assoc.with* Cuprite, Redruthite, and Malachite, in schist and quartz. *Loc.* Ready Rhino M.L. (320), 2½ miles N.N.W. of Mt. Start, Ready Rhino Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 93-95 (1908).

5787. ——. *Assoc.with* Tile Ore and Malachite, in ferruginous quartz and schist. *Loc.* White Rose M.L. (330), Ready Rhino Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 97, 98 (1908).

5788. ——. *Assoc.with* Gold, in quartz and calcite. *Loc.* Rose and Thistle Reef, Weatherly Cr., Soldier's Cap Diggings, 24 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 4 (1895).

5789. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, Malachite, Chrysocolla, and Iron Pyrites, in schist, slate, and quartzite. *Loc.* Banjo M.L. (590), head. br. of Duck Cr., 26 miles N.W. of Cloncurry, Tambourine Group. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 167, 168 (1908).

5790. ——. *Assoc.with* Copper Pyrites, Redruthite, Azurite, Malachite, Chrysocolla, Iron Pyrites, and Tourmaline, in schist, slate, and quartz. *Loc.* Tambourine R.C. (286) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 166, 167 (1908).

5791. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Chrysocolla, and Turgite, in schist and quartz. *Loc.* Brilliant M.L. (588), 1½ mile N.W. of Mt. Start, 18 miles S.W. of Cloncurry, Tharsis Group. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 114, 115 (1908).

5792. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Göthite, in chloritic schist. *Loc.* Brilliant M.C. (159) (Timberoo Group), Slaty Cr., 18 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 179, 180 (1908).

5793. ——. *Assoc.with* Copper Pyrites, Ferro-Calcite, and Calcite, in clay schist. *Loc.* Ida M.C. (179), Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 178, 179 (1908).

5794. ——. *Assoc.with* Malachite, Calcite, Ferro-Calcite, and Tourmaline, in cellular gossan and chloritic schist. *Loc.* Marguerite M.C. (151), Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 177, 178 (1908).

5795. ——. *Assoc.with* Copper Pyrites, Cuprite, and Malachite, in chloritic schist. *Loc.* Mt. Minde M.F. (2658), Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 170-172 (1908).

5796. ——. *Assoc.with* Copper Pyrites and Redruthite, in chloritic slate and sinter. *Loc.* Resurgam M.L. (399), Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 175-177 (1908).

5797. ——. *Assoc.with* Copper Pyrites, Redruthite, Bornite, Tile Ore, Iron Pyrites, Hematite, Muscovite, and Calcite, in schist, slate, and quartz. *Loc.* Timberoo M.L. (716), Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 172-175 (1908).

5798. ——. *Assoc.with* Redruthite, Tile Ore, Azurite, and Malachite, in gossany quartz and schist. *Loc.* Wallaroo M.L. (392) (Wee MacGregor Group), Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 202-205 (1908).

5798A.——. *Assoc.with* Gold, Tile Ore, and Malachite, in lode. *Loc.* Soldier's Cap Diggings, 24 miles S.E.byS. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* A.R., p. 278 (1910).

5799. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in quartz. *Loc.* Post Hole Reef, Croydon Township, Croydon Goldfield, 94 miles (by rail) S.E. of Normanton. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 35, p. 8 (1887), and 118, p. 21 (1896).

5800. ——. *Assoc.with* Gold, in quartz. *Loc.* Queen of Croydon Reef, 1 mile N. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 8 (1887).

5800A.——. *Assoc.with* Gold and Native Silver, in quartz. *Loc.* Miner's Right Lease (Queen of Croydon Reef), 1 mile E.byS. of Croydon Rail. Stn., Croydon Goldfield (*ante*).

5801. ——. *Assoc.with* Gold, in quartz. *Loc.* Banner of Freedom Reef, Golden Gate, 4 miles (by rail) N.W. of Croydon Rail. Stn., 90 miles (by rail) S.E. of Normanton. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 9 (1887).

5802. ——. *Assoc.with* Gold, Iron Pyrites, Minium, and Hematite, in quartz. *Loc.* Eureka Reef, 1 mile from Flanagan's, 13 miles E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 1 (1887).

5803. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Malachite, and Chrysocolla, in gossany quartz and calcareous sinter. *Loc.* Boundary M.L. (582) (Bull Cr. Group), Coolulah Run, 74 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 345-347 (1908).

5804. ——. *Assoc.with* Redruthite and Malachite, in schist. *Loc.* Iguana M.C. (268), Bull Cr. Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 349, 350 (1908).

5805. ——. *Assoc.with* Copper Pyrites, Bornite, and Malachite, in limestone. *Loc.* Centipede M.L. (375) (Centipede Group), Prospector Cr., 53 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 301, 302 (1908).

5806. ——. *Assoc.with* Native Copper, Cuprite, Tetrahedrite, Redruthite, Malachite, Iron Pyrites, Hematite, and Magnetite. *Loc.* Crusader M.F. (2549), Crusader Group, Coolullah Run, 68½ miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pubs. 10, p. 8 (1885), 215, p. 334 (1908).

5807. ——. *Assoc.with* Copper Pyrites, Redruthite, and Malachite, in quartz. *Loc.* Bauhinia M.C. (347) (Dobbyn Group), Coolullah, 3½ miles W.N.W. of Crusader Fs., 70½ miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 341, 342 (1908).

5807A. Limonite. *Assoc.with* Malachite, in gossany quartz. *Loc.* Dobbyn M.F. (2551), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 340 (1908).

5808. ——. *Assoc.with* Copper Pyrites, Redruthite, and Malachite, in schist. *Loc.* Dobbyn No. 1 S. M.L. (662), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 341 (1908).

5809. ——. *Assoc.with* Malachite and Chrysocolla, in quartz. *Loc.* Elsie M.C. (?), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 342, 343 (1908).

5810. ——. *Assoc.with* Redruthite, Tile Ore, and Malachite, in gossany quartz. *Loc.* Flaneur M.L. (655), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 344, 345 (1908).

5811. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Calcite, and Ferro-Calcite, in quartz. *Loc.* Glenferrie P.A., nr. Old Man Cr., Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 344 (1908).

5812. ——. *Assoc.with* Native Copper, Cuprite, and Chrysocolla, in schist and quartzite. *Loc.* Little Wonder M.L. (258), (Mighty Atom Group), 6-Mile Cr., Leichhardt R., 60 to 63 miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub, 215, pp. 310, 311 (1908).

5813. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Azurite, Malachite, and Chrysocolla, in schist, slate, and gossan. *Loc.* Mighty Atom M.L. (274), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 304-306 (1908).

5814. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Malachite, in gossan and quartz. *Loc.* Mt. Bornite M.L. (376), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 309, 310 (1908).

5815. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tile Ore, and Malachite, in slate, schist, and gossan. *Loc.* Mt. Millicent M.L. (663), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 307, 308 (1908).

5816. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Malachite, in slate and kaolin. *Loc.* Mt. Millicent S. M.L. (664), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 308, 309 (1908).

5817. ——. In gossan. *Loc.* Rover M.L. (678), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 306, 307 (1908).

5818. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Tile Ore, and Malachite, in schist, slate, and gossan. *Loc.* Mt. Cuthbert M.L. (107), Mt. Cuthbert Group, 6-Mile Cr., Leichhardt R., 19 miles S.W. of Coolullah H. Stn., 63 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 315, 318 (1908).

5819. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, and Chrysocolla, in schist, gossan, and quartz. *Loc.* Mt. Cuthbert No. 1 M.L. (381), Mt. Cuthbert Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 318-321 (1908).

5820. ——. *Assoc.with* Copper Pyrites, Malachite, Chrysocolla, Iron Pyrites, Ironstone, and Magnesite, in kaolinised schist. *Loc.* Mt. Cuthbert 1 and 2 S. M.Ls. (257 and 294), Mt. Cuthbert Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 321, 322 (1908).

5821. ——. *Assoc.with* Iron Pyrites, Jasper, and Chalcedony, in quartz. *Loc.* Dreadnought M.L. (452), Mt. Metallic Group, Prospector Cr., Leichhardt R., 52 miles W.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 299 (1908).

5822. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Tenorite, Malachite, and Iron Pyrites, in slate and gossan. *Loc.* Mt. Metallic R.C. (310), Mt. Metallic Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 295, 296 (1908).

5823. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Malachite, in schist, gossan, and quartz. *Loc.* Chance P.A. (283), St. Paul's Cr. Group, Leichhardt R., Coolullah, 78 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 352-354 (1908).

5824. ——. *Assoc.with* Copper Pyrites and Redruthite, in kaolin. *Loc.* Queen Bee M.C. (278), St. Paul's Cr. Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 354 (1908).

5825. ——. *Assoc.with* Copper Pyrites, Redruthite, and Calcite, in schist and quartz. *Loc.* Hare's Excelsior M.L. (?), Von Bremen's Group, St. Paul's Cr., Coolullah, Leichhardt R., 70 miles N.W.byW. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 327, 328 (1908).

5826. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Malachite, in schist, gossan, and quartz. *Loc.* Isabella M.C. (360), Von Bremen's Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 325, 326 (1908).

5827. ——. In silicified slate. *Loc.* Gaeta Goldfield, 30 miles N. of Mt. Perry Rail. Stn. *Co.* Yarrol; *Dist.* **Burnett.** *Ref.* O.R.

5828. ——. *Assoc.with* Copper, in lode. *Loc.* Canterbury Copper Mine, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen. *Dist.* Burnett. *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

5828A. ——. *Assoc.with* Gold, Copper Pyrites, and Malachite, in lode. *Loc.* Nr. Wonbah Hill Mine, 2 miles from Wonbah Siding (Mt. Perry line), 60 miles (by rail and road) W.S.W. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* A.R., p. 264 (1910).

5829. ——. *Assoc.with* Göthite, Malachite, and Azurite. *Loc.* Lakeside, nr. Degilbo, 58 miles (by rail) W. of Maryborough (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* A.R., p. 134 (1908).

5830. —— (earthy). *Assoc.with* Bismite. *Loc.* Mt. Shamrock Gold Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 25, p. 1 (1886).

5831. ——. *Assoc.with* Galena and Redruthite, in lode. *Loc.* Girl-I-Left-Behind-Me Claim, Stanton-Harcourt Diggings, 11 miles N. of Degilbo Rail. Stn. (Gayndah line), 69 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Assay:* Silver = 8 oz. per ton. *Ref.* G.S.Q. Pub. 168, p. 3 (1901).

5832. ——. *Assoc.with* Turgite. *Loc.* Scotland Hills, 5 miles S. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* Burnett. *Analysis:* Iron = 33·4 per cent. *Ref.* G.S.Q. Pub. 194, p. 50 (1904), and Q.G.M.J., vol. 5, p. 123 (1904).

5832A. ——. *Assoc.with* Galena, Cerussite, Anglesite, Massicot, Malachite, and Azurite, in lode. *Loc.* About 5 miles S. of Coalstoun Lakes, 16 miles S.W. of Biggenden Rail. Stn. (Gayndah line). *Co.* Mackenzie (*ante*). *Ref.* A.R., pp. 287, 288, 291 (1910).

5833. ——. *Assoc.with* Manganese dioxide. *Loc.* Gt. Eastern Mine (Stewart's), Cadarga Cr., 32 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. *Ref.* L.C.B.

5833A. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Manganese-dioxide, in quartz. *Loc.* Cadarga Cr. Gold Mines, between Cadarga Cr. and Auburn R., 33 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle (*ante*). *Ref.* Q.G.M.J., vol. 5, pp. 162, 163 (1904), and G.S.Q. Pub. 207, p. 11 (1907).

5834. ——. *Assoc.with* Hematite. *Loc.* Cabbage Tree Cr., br. of Splinter Cr., Dawe's Range, 40 miles S.W. of Miriam Vale Rail. Stn. (North Coast line). *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 194, p. 31 (1904).

5835. ——. *Assoc.with* Gold, in quartz. *Loc.* Golden Spur P.A. Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol (*ante*). *Ref.* G.S.Q. Pub. 43, p. 3 (1887).

5836. ——. *Assoc.with* Hematite, in quartz. *Loc.* 6 miles from Eidsvold Goldfield, 41 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol (*ante*). *Ref.* G.S.Q. Pub. 43, p. 1 (1887).

5837. ——. *Assoc.with* Gold, Silver, and Iron Pyrites, in quartz. *Loc.* Apple-tree Lease, Cabbage Tree Cr., Mt. Cannindah, 13 miles S.W.byS. of Many Peaks Rail. Stn., 71 miles (by rail and road), S. of Gladstone. *Co.* Yarrol (*ante*). *Assay: See* No. 3657. *Ref.* G.S.Q. Pub. 113, p. 9 (1896).

5837A. ——. *Assoc.with* Copper Pyrites, Malachite, and Azurite, in quartz. *Loc.* Malpas's Claim, Pinnacle Cr., br. of Lynd R., 16 miles W. of Fossilbrook, Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* A.R., p. 223 (1910).

5838. ——. As pseudomorphs after Iron Pyrites. *Loc.* Cannibal Cr. Tin Mines, nr. Mt. Hurford, 15 miles S.E. of Maytown, Palmer. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.M.

5839. ——. *Assoc.with* Gold and Copper carbonate, in quartz. *Loc.* Trafalgar Reef, 3½ miles S.E. of Ebagoolah, Hamilton Goldfield. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, pp. 13, 14 (1901).

5840. ——. *Assoc.with* Gold (traces) and Manganese-dioxide, in quartz. *Loc.* On hill, below mouth of St. George R., 6 miles S.E.byS. of Limestone. *Co.* Dagmar; *Dist.* Cook. *Ref.* G.S.Q. Pub. 46, p. 2 (1889).

5840A. ——. *Assoc.with* Silver, Galena, Copper Pyrites, and Cerussite, in lode. *Loc.* Mt. Dee Vall. Claim, Charleston, 144 miles (by rail) S.W. of Almaden Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* O.R. (1910).

5840B. ——. *Assoc.with* Silver, Galena, and Massicot, in quartz. *Loc.* M.L. 64, Mosquito Cr., about 10 miles S.W.byS. of Charleston Rail. Stn. (Etheridge line). *Co.* Gilbert (*ante*). *Assays: See* No. 2756B. *Ref.* A.R., p. 268 (1910).

5841. Limonite. *Assoc.with* Gold, Iron Pyrites, and Hematite, in quartz. *Loc.* Caledonia Reef, Caledonia Cr., trib. of Goldsmith's Cr., 24 miles S.S.E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

5841A. ——. *Assoc.with* Copper Pyrites, Copper carbonate, Chalcanthite, Iron Pyrites, Mispickel, Marcassite, Cassiterite, Wolfram, Red and Yellow Ochre, in chlorite. *Loc.* Try Again and Chance Mine, Watsonville, 7 miles E.S.E. of Stannary Hills Rail. Stn. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 13, p. 24 (1883), and P.R.S.Q., vol. 4, p. 52 (1887).

5842. ——. *Assoc.with* Iron Pyrites, Galena, and Anglesite, in quartz reef. *Loc.* near Mt. Luxton, California Cr., 3 miles N.E. of Ord Rail. Stn. (Chillagoe-Mt. Garnet line), 120 miles (by rail and road) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 12 (1899).

5843. ——. *Assoc.with* Hematite and Cerussite. *Loc.* Girofla Mine, Mungana, 149 miles (by rail) W.S.W. of Cairns (Cairns-Chillagoe lines), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, p. 12 (1898).

5844. ——. Red Hills, nr. Mungana Rail. Stn. (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

5845. ——. *Assoc.with* Ironstone, Siderite, Tetrahedrite, Malachite, and Manganese-dioxide. *Loc.* Queenslander Lease, Redcap Cr., 3 miles S.E. of Mungana Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

5846. ——. *Assoc.with* Copper Pyrites, Bornite, Redruthite, Malachite, Azurite, Hematite, Cinnabar, and Jasper, in quartz and calcite. *Loc.* St. George Copper and Coal Mines, Little R., 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mossman; *Dist.* Cook. *Ref.* G.S.Q. Pub. 222, pp. 21-32 (1910).

5847. ——. *Assoc.with* Gold, in gravelly alluvial deposits. *Loc.* Burns and Party Claim, Terraces, Russell Goldfield, 22 miles W.N.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 45, p. 3 (1888).

5848. ——. *Assoc.with* Gold, Bismutite, Magnetite, Manganese-dioxide, Ruby, and Garnet, in alluvial deposits. *Loc.* Agate Cr., br. of Robertson R., 38 miles S. of Georgetown, 21 miles S.S.W. of Charleston, Etheridge. *Co.* Victor; *Dist.* Cook. *Ref.* L.B. 1, p. 940 (1887).

5849. ——. *Assoc.with* Minium, Cerussite, and Copper carbonate, in lode traversing slate, greywacke, and quartzite. *Loc.* Monte Video Mine, between Ashton and Bowler Crs., Ashtonville, 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Wrotham; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 15 (1898).

5850. ——. *Assoc.with* Göthite and Turgite, in basalt. *Loc.* Por. 1847, Rolleston, 3 miles N.E. of Pittsworth Rail. Stn., 39 miles (by rail and road) S.W.byS. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Analysis:* Iron = 49·9 per cent. *Ref.* G.S.Q. Pub. 194, pp. 62, 63 (1904).

5851. ——. *Assoc.with* Turgite, in basalt. *Loc.* Por. 2110, Rolleston, few chains W. of Green Hills Rail. Stn. (Pittsworth Br. line), 32 miles (by rail) S.W.byS. of Toowoomba. *Co.* Aubigny (*ante*). *Ref.* G.S.Q. Pub. 194, p. 63 (1904).

5852. ——. *Assoc.with* Göthite and Turgite, in basalt. *Loc.* Por. 2188, Rolleston, 1 mile S.S.E. of Green Hills Rail. Stn. (Pittsworth line), 33 miles (by rail and road) S.W.byS. of Toowoomba (*ante*). *Analysis:* Iron = 52·3 per cent., Titanium = nil, Silica and insoluble = 8·9 per cent., Phosphorus = 0·2 per cent., Sulphur = trace. *Ref.* G.S.Q. Pub. 194, p. 63 (1904).

5853. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and Manganese-dioxide, in quartz. *Loc.* Glenelg Reef, nr. Oaky Cr., 9 miles E. of Glenelg Head Stn., 55 miles (by road) W.S.W. of Warwick. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* (and *Assays*) G.S.Q. Pub. 40, p. 1, 2 (1887).

5854. ——. *Assoc.with* Manganese-dioxide in the form of Wad, Pyrolusite, and Psilomelane. *Loc.* S. of Pikedale Hotel, 11 miles W. of Stanthorpe Rail. Stn. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 95 (1898).

5855. —— (silky, golden). In laterite. *Loc.* Mt. Sturt, 2 miles N.N.W. of Yangan Rail. Stn. (Killarney line), 15 miles (by rail and road) E.byN. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 186, p. 20 (1903).

5856. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Clare's Reef, 3 miles W. of Pratten, 22 miles, W.N.W. of Warwick, Talgai Goldfield. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 205, p. 28 (1906).

5857. ——. *Assoc.with* Gold and Manganese-dioxide, in quartz leaders. *Loc.* Golden Gate Lease, 3 miles W. of Pratten (*ante*). *Ref.* G.S.Q. Pub. 205, p. 29 (1906).

5858. ——. *Assoc.with* Gold, in quartz. *Loc.* Victoria Reef, 3 miles W. of Pratten (*ante*). *Ref.* G.S.Q. Pubs. 186, p. 16 (1903), 205, p. 30 (1906).

5859. ——. *Assoc.with* Gold, in quartz. *Loc.* Welcome Stranger Lease, nr. Big Hill Mine, 3 miles W. of Pratten (*ante*). *Ref.* G.S.Q. Pubs. 186, p. 4 (1903), and 205, pp. 27, 28 (1906).

5860. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Calcite, and Epsomite, in quartz lode in schist and quartzite. *Loc.* Duchess M.L. (275), (Duchess Group), Burke R., 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 18-23 (1908).

5861. ——. *Assoc.with* Cuprite, Malachite, and Azurite, in quartz. *Loc.* Ivanhoe M.L. (277), Duchess Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 23, 24 (1908).

5862. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, and Malachite, in kaolinised rock, schist, and quartz. *Loc.* Italian M.L. (689), (Lady Fanny Group), Wills R., 60 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 34, 35 (1908).

5863. ——. *Assoc.with* Tile Ore and Malachite, in porphyry, quartzite, and quartz. *Loc.* Prodigal M.L. (490), Lady Fanny Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 36 (1908).

5864. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Redruthite, Cuprite, Malachite, and Chrysocolla, in hornblende schist. *Loc.* Mt. Birnie M.L. (686, etc.), Mt. Birnie Group), Burke R., 74½ miles S.S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, p. 367 (1908).

5865. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Cuprite, Native Copper, Malachite, Atacamite, and Calcite, in chloritic schist and quartz. *Loc.* Blue Jacket M.L. (632), 3 miles E. of Mt. Hope, Wills R., 53½ miles S.W. of Cloncurry, Mt. Hope Group. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 43, 44 (1908).

5866. ——. *Assoc.with* Copper Pyrites, Redruthite, and Malachite, in gossan, quartz, and slate. *Loc.* Little Beauty M.L. (568), 2½ miles E.N.E. of Mt. Hope, Wills R., 55 miles S.W. of Cloncurry, Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp 44-47 (1908).

5867. ——. *Assoc.with* Copper Pyrites, Redruthite, Covelline (?), Tile Ore, Malachite, Iron Pyrites, and Calcite, in chloritic schist. *Loc.* Monarch Senior M.C. (352), 3 miles E. of Mt. Hope, 56 miles S.W. of Cloncurry, Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 42, 43 (1908).

5868. ——. *Assoc.with* Cuprite and Malachite, in quartz and quartzite. *Loc.* Mt. Hope M.L. (366), Green's Cr., trib. of Burke R., 53½ miles S.W. of Cloncurry, Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 38, 39 (1908).

5869. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Chrysocolla, in quartz and kaolin. *Loc.* Trikelana M.L. (522), (Trikelana Group), Pilgrim Cr., 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, p. 26 (1908).

5870. ——. *Assoc.with* Tile Ore, Tenorite, Redruthite, Malachite, and Iron Pyrites, in slate and gossan. *Loc.* Labour Victory R.C. (29) Agate Downs Group), 53 miles S. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 12-14 (1908).

5871. ——. *Assoc.with* Gold, Cuprite, Tile Ore, Tenorite, Malachite, Atacamite, Chalcanthite, Iron Pyrites, Calcite, and Chalcedony, in slate and gossan. *Loc.* Mt. Elliott R.C. (3, etc.), (Mt. Elliott Group), Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin (*ante*). *Ref.* G.S.Q. Pub. 215, pp.3-12 (1908).

5872. ——. *Assoc.with* Cassiterite and Hematite, in quartz. *Loc.* Magdala Tin Mine, Magdala Hill, Coolgarra, 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

5873. ——. *Assoc.with* Iron Pyrites, Mispickel, Göthite, Hematite, Azurite, Malachite, Cassiterite, Wolfram, Websterite, Chlorite, Fluorspar, Penninite, and Topaz, in quartz lode. *Loc.* Tin Mines, Coolgarra (*ante*). *Ref* G.S.Q. Pub. 72, p. 2 (1891).

5874. ——. *Assoc.with* Hematite, Tetrahedrite, Malachite, Azurite, Galena, Mimetite, in lode. *Loc.* Mt. Garnet Mine, Return Cr., 136 miles (by rail) S.W. of Cairns (Cairns, Chillagoe, and Mt. Garnet lines), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

5875. ——. *Assoc.with* Gold, Iron Pyrites, Magnetite, Hematite, Chalcanthite, Manganese-dioxide, and Talc, in porphyry rock. *Loc.* Mt. Leyshon Mine, 16 miles S. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pubs. 18, p. 1 (1885), and 73, p. 13 (1891).

5875A. Limonite. *Assoc.with* Gold, Silver, Galena, and Cerussite, in lode. *Loc.* ¾-mile E. of Mt. Leyshon, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

5876. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Lancashire Lass Mine, Far Fanning, 28 miles (by road) N.W. of Ravenswood Junction. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 133, p. 6 (1898), and G.S.M.

5877. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in quartz and calcite. *Loc.* Golden Valley Reef, Mt. Success, 15 miles N.N.W. of Ravenswood Junction. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 133, p. 10 (1898).

5878. ——. *Assoc.with* Gold, in quartz. *Loc.* "The Springs" Reef, 2 miles W.S.W. of Pentland Rail. Stn., 68 miles (by rail and road) S.W.byW. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 3 (1891).

5879. ——. In quartz. *Loc.* Lake Lucy, Upper Burdekin, 112 miles N.W. of Townsville. *Co.* Gunnawarra; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 5 (1891).

5879A. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Malachite. *Loc.* Mare's Nest Cr., Andromache R., 44 miles S.S.E. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* O.R. (1909).

5879B. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Lady Augusta P.A. (129), Moss Vale Stn., nr. Euri Cr., about 7 miles S.W. of Bowen. *Co.* Herbert (*ante*). *Ref.* A.R., p. 269 (1910).

5880. ——. *Assoc.with* Iron Pyrites, Hematite, Azurite, Malachite, and Cassiterite, in quartz and chlorite. *Loc.* M.L., in gully off Douglas Cr., Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

5881. ——. *Assoc.with* Cuprite, Azurite, and Malachite. *Loc.* Kallanda, Kangaroo Hills Mineral Field (*ante*). *Ref.* A.R., p. 106 (1907).

5882. ——. *Assoc.with* Hematite, Galena, Cerussite, Copper carbonate, in gossany lode. *Loc.* Mt. Brown Lease (183), Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 82, p. 10 (1892).

5883. ——. *Assoc.with* Hematite, in quartzose gangue. *Loc.* Iron Mountain, N. of Donnybrook, Upper Burdekin, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 71, p. 10 (1891).

5883A. ——. *Assoc.with* Gold, Iron Pyrites, Turgite, Ironstone, Galena, and Copper Pyrites, in quartz. *Loc.* Broken R. Gold and Silver Co.'s Mine, Bee Cr. Diggings, Eungella Goldfield, 10 miles W. of Finch-Hatton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* (and *Assays*) G.S.Q. Pubs. 54, pp. 2, 3 (1889), and 229, pp. 31, 32 (1910).

5883B. ——. *Assoc.with* Gold and Malachite, in quartz. *Loc.* Highland Chief Reef, Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 229, p. 30 (1910).

5883C. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Malachite, Siderite, Galena, and Zinc Blende, in quartz. *Loc.* Highland Mary P.C., Bee Cr. Diggings, Eungella Goldfield, 10 miles W. of Finch-Hatton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), and 229, p. 30 (1910).

5884. ——. In quartz reef. Nr. Denison's Cr., 24 miles S.byW. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 39, p. 7 (1887).

5885. ——. *Assoc.with* Gold, in quartz. *Loc.* Captain Brown's Lease, Grass-tree Goldfield, 17 miles S.byE. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 93, p. 8 (1893).

5885A. ——. *Assoc.with* Silver, Malachite, and Azurite, in lode. *Loc.* nr. Finch-Hatton Rail. Stn. (Mackay line), 38 miles W.S.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* A.R., p. 280 (1910).

5886. ——. Mt. McGregor, 2½ miles S.E. of Mt. Toby, 2½ miles N.N.E. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* L.B., 1, p. 941 (1887).

5887. ——. *Assoc.with* Gold, in quartz. *Loc.* Sel. 661, Mackay. *Co.* Carlisle (*ante*). *Assays: See* No. 4119. *Ref.* G.S.Q. Pub. 39, p. 3 (1887).

5888. ——. *Assoc.with* Malachite and Azurite. *Loc.* Lady Jane Mine, Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* O.R.

5889. ——. As pseudomorph after Iron Pyrites in schist. *Loc.* McDonald's Flat, 3 to 4 miles S.S.E. of Clermont Rail. Stn., Clermont Goldfield. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* B.D.

5890. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Christmas Hill, "The Springs," 11 miles N.N.W. of Clermont Rail. Stn., Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 201, p. 24 (1906).

5891. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Well and Hill's Claim, Pewt's Hill, The Springs (*ante*). *Ref.* G.S.Q. Pub. 201, p. 20 (1906).

5892. ——. *Assoc.with* Gold and Hematite, in gossan. *Loc.* Stewart and Spier's Mine, Mt. Clifford, between Retreat and Ruby Creeks, 9½ miles (by road) N.W. of Anakie. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 129, p. 3 (1898).

5893. ——. *Assoc.with* Gold and Hematite, in slate. *Loc.* N. of Policeman Cr., 9 miles N. of Anakie, 202 miles (by rail and road) W. of Rockhampton (Central line). *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 172, p. 4 (1902).

5894. ——. *Assoc.with* Bornite and Malachite. *Loc.* Freedom of Contract No. 2 Mine, between Retreat and Ruby Creeks, 6½ miles N.E. of Withersfield Rail. Stn. (Central line). *Co.* Clermont (*ante*). *Assay: See* No. 6335. *Ref.* G.S.Q. Pub. 81, p. 4 (1892).

5895. ——. *Assoc.with* Magnetite, in quartz and lydianstone. *Loc.* Oswald Mine, between Ruby and Retreat Creeks, 8 miles N.N.W. of Anakie Rail. Stn. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 127, p. 3 (1898).

5895A.——. *Assoc.with* Malachite, Azurite, and Jasper, in gossan in granite and slate. *Loc* Eastern Sel. M.F. (2755), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 288, p 23 (1910).

5895B.——. *Assoc.with* Iron Pyrites, Hematite, Redruthite, Malachite, and Azurite, in granite. *Loc.* Monarch P.P.A. (116, etc.), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 36-38 (1910).

5895C.——. *Assoc.with* Iron Pyrites, Pyrrhotite, Hematite, Magnetite, Copper Pyrites, Malachite, and Azurite, in granite and slate. *Loc.* Rodger's Back Sel. M.F. (1430), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 41, 42 (1910).

5896. ——. *Assoc.with* Calcite. *Loc.* Main Range, 25 miles N.E. of Yeulba Rail. Stn. (Roma line). *Dist.* **Maranoa.** *Ref.* P.R.S.Q., vol. 4, p. 61 (1887).

5897. ——. In red and yellow clays. *Loc.* Blackbutt Range, nr. Taromeo, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 159, p. 24 (1901).

5898. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Massicot, Anglesite, Galena, and Mispickel, in gossan and slate. *Loc.* Silver Knob P.A., Emu Cr., Mt. Langan, 14½ miles W.N.W. of Kannungar Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Assay: See* No. 3033. *Ref.* Q.G.M.J., vol. 7, p. 467 (1906).

5899. ——. As pseudomorph, after Iron Pyrites. *Loc.* Mt. Wilson, nr. Boonah, 59 miles (by rail) S.S.W. of Brisbane. *Co.* Churchill; *Dist.* Moreton.

5900. ——. Por. 292, Brassall, Pine Mt., 7 miles (by rail) N.N.W. of Ipswich. *Co.* Churchill (*ante*). *Ref.* L.C.B.

5900A.——. Outcrop 50 feet high, 100 feet below the top of mountain, and resting on granite. *Loc.* Agric. Sel. 6178, 14 miles from Grantham Rail. Stn., *Par.* Whitestone; *Co.* Churchill; *Dist.* Moreton. *Composition:* Large quantities said to contain 60 per cent. of peroxide of iron.

5901. ——. Quarter mile east of Spresses, Karrabin Rd., nr. Pine Mt. (*ante*). *Ref.* L.C.B.

5902. ——. Upper Kholo Bridge, Brisbane R., 3 miles N. of Ipswich. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 194, p. 56 (1904).

5903. ——. *Assoc.with* Cacoxenite. *Loc.* On hill on Watt's Sel. 55, nr. Buckley's Shaft, 8 miles S. of Beenleigh, 28 miles (by rail and road) S.E. of Brisbane (South Coast line). *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 36, p. 2 (1887).

5904. ——. *Assoc.with* Gold, in quartz. *Loc.* Jamieson's Sel. (36), Wonga Wallen Cr., Coomera R., 38 miles (by rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 51, p. 5 (1889).

5905. ——. Degalgil Cr., 40 miles S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 194, p. 27 (1904).

5906. ——. *Assoc.with* Gold, Silver, Galena, Anglesite, Minium, Cerussite, Massicot, and Hematite. *Loc.* Bompa Silver-Lead Mines, Glassford Cr., 2 miles W. of S. of Littlemore Rail. Stn. (Boyne Valley line), 53 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 159, pp. 7, 8 (1901).

5907. Limonite. *Assoc.with* Copper Pyrites, Native Copper, Cuprite, Tile Ore, Malachite, Azurite, Iron Pyrites, Magnetite, Hematite, and Calcite. *Loc.* Many Peaks Copper Mine, Deception Cr., about 58 miles (by rail) S. of Gladstone (Boyne Valley line). *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 150, p. 8 (1900), and 194, p. 28 (1904).

5908. ——, *Assoc.with* Gold, Iron Pyrites, Mispickel, and Zinc Blende, in quartz. *Loc.* Paddock Reef, Norton Goldfield, 33 miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 208, p. 34 (1907).

5908A.——. *Assoc.with* Bornite, Malachite, and Azurite, in quartz lode. *Loc.* 4 miles from Mt. Bennett, about 30 miles W.S.W. of Gladstone, Langmorn Goldfield. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* A.R., p. 218 (1910).

5909. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* New Silkworth Mine, Ulam Goldfield, 36½ miles W.N.W. of Gladstone. *Co.* Deas Thompson (*ante*). *Ref.* G.S.Q. Pub. 99, p. 11 (1894).

5910. ——. *Assoc.with* Green Chrome Silicate, and Gold, in quartz. *Loc.* Federated Amalgamated Mine, Oaks View, 4 miles N. of Oaks Stn., 45 miles (by road) N.N.W. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 205, p. 18 (1906).

5911.——. *Loc.* Mt. Hay, 1½ miles S. of Wycarbah Rail. Stn. (Central line), about 25½ miles (by rail and road) S.W.byS. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis.

5912. ——. As pseudomorph, after Iron Pyrites, in clay slate. *Loc.* Honest Bob's Mine, New Zealand Gully, 15 miles (by rail) N.N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* B.D.

5912A.——. *Assoc.with* Gold. *Loc.* Dawn of Hope Mine, Ridgelands Goldfield, 20 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.M.

5913. ——. *Loc.* Stewart's Cr., 1 to 3 miles W.N.W. of Stanwell, 16 to 20 miles (by rail and road) S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

5914. ——. *Assoc.with* Gold and Manganese-dioxide, in quartz lode. *Loc.* Taranganba Gold Mine, 1 mile S. of Yeppoon, 10 miles S. of Emu Park Rail. Stn., 42 miles (by rail and road) N.E.byN. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 50, p. 5 (1889).

5915. ——. E. of Green Hill, 40 miles S. of Mackay. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 39, p. 10 (1887).

5916. ——. Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 31 (1904).

5917. ——. *Assoc.with* Magnetite and Hematite. *Loc.* Iron Gully, br. of Boulder Cr., 6 miles W.S.W. of Mt. Morgan Rail. Stn. *Co.* Raglan; *Dist.* Port Curtis. *Analysis:* Iron = 62·65 per cent. *Ref.* G.S.Q. Pub. 194, p. 16 (1904).

5918. ——. *Assoc.with* Gold, in quartz reef, in granite. *Loc.* E. of Glen Dee, Dee R., 5 miles E. of Mt. Morgan Rail. Stn., 29 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 161, p. 15 (1901).

5919. ——. As pseudomorph, after Iron Pyrites, in diorite. *Loc.* Railway Cutting, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 195 (1904).

5919A.——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Iron Pyrites, Hematite, and Magnetite, in gossan lode. *Loc.* M.L. (262), Kroombit Copper Mine, 4¼ miles E.S.E. of Kroombit Hd. Stn., 56 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 98 (1906).

5920. ——. *Assoc.with* Gold and Hematite, in lode. *Loc.* Mt. Alexander Mines, 8 miles E.S.E. of Mt. Morgan Rail. Stn., 32 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 132, p. 17 (1898).

5921. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Magnetite, Hematite, Göthite, Pyrolusite, and Satin Spar, in vesicular quartz, quartzite, and kaolin. *Loc.* Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pubs. 17 (1884), 47 (1888), 83 (1892), 132 (1898).

5922. ——. *Assoc.with* Gold, Iron Pyrites, and Calcite, in quartzite lode. *Loc.* Hidden Treasure Mine, S. of Mundic Cr., 1 mile W S.W. of Mt. Morgan Rail. Stn., 25 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 161, pp. 9-12 (1901).

5923. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tenorite, Malachite, Azurite, Iron Pyrites, and Hematite, in lodes in syenitic granite. *Loc.* Calgoa Copper Mines, Thunder Cr., Calgoa Cr., 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 207, pp. 5-11 (1907).

5924. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Cuprite, Redruthite, Malachite, Bismuthinite, and Magnetite. *Loc.* Kabonga Mine, Kilkivan Mineral Field, 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 125, p. 36 (1897).

5925. ——. As pseudomorph, after Iron Pyrites. *Loc.* Kilkivan Gold and Mineral Field (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 61 (1887).

5926. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, Zinc Blende, and Copper carbonate, in quartz and calcite. *Loc.* Mt. Ruby, ½-mile W.N.W. of Glenbar Head Stn., 20 miles W. of Tiaro Rail. Stn. (Gympie-Maryborough line). *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

5927. ——. Pannietta Is., 360 miles E byS. of Port Moresby, **Brit. New Guinea.** *Ref.* A.R. B.N.G., p. 125 (1891).

5928. ——. As pseudomorphs after Iron Pyrites. *Loc.* Port Moresby, 380 miles N.byE. of Cooktown, Brit. New Guinea. *Ref.* O.R.

5929. ——. As pseudomorphs after Marcasite. *Loc.* Port Moresby (*ante*). *Ref.* G.S.M.

5930. ——. Damora, Rossel Is., 480 miles E.S.E. of Port Moresby, Brit. New Guinea. *Ref.* A.R. B.N.G., 124, p. 91.

5931. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and Psilomelane, in quartz. *Loc.* Caledonia Claim, Sudest Is., 448 miles E.S.E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 29 (1892).

5932. ——. *Assoc.with* Gold, in quartz. *Loc.* Sudest (Tagula) Is. (*ante*). *Ref.* G.S.Q. Pub. 85, p. 31 (1892).

5933. ——. **Yellow Ochre** (*Var.*) *Assoc.with* Hematite, in large quartz lodes. *Loc.* Gully, nr. Police Cr., trib. of Gregory R., 90 miles S.S.W. of Burketown. *Co.* Gregory; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 10 (1885).

5934. —— ——. *Assoc.with* Red Ochre and Cassiterite. *Loc.* Try Again and Chance Mine, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

5935. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Copper carbonate, in quartz. *Loc.* Seymour's Reef, Marengo Goldfield, 30 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

5936. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Tetrahedrite, Mispickel, Siderite, and Ironstone, in quartz. *Loc.* Grace Darling Lease (11), Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pubs. 5, p. 6 (1879), 88, p. 3 (1893).

Linarite. *Syn.* Cupreous Anglesite. *Compo.*, Sulphate of lead and copper. *Colour*, azure-blue. *H.* = 2·5. *Sp.gr.* = 5·3-5·4.

5937. ——. *Assoc.with* Galena, Cerussite, and Massicot, in lode. *Loc.* Caledonia Mine, Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

5938. ——. *Assoc.with* Galena, Chalcanthite, Massicot, Minium, and Anglesite, in slate. *Loc.* John Bull Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

5939. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Cerussite, Manganese-dioxide, Zinc Blende, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* (and *Assays*) G.S.Q. Pub. 82, p. 3 (1892).

5940. ——. *Assoc.with* Galena, Anglesite, Minium, Cerussite, and Pyromorphite, in lode. *Loc.* Alpha Silver-Lead Mine, Star R. (Argentine) Silver Field, 30 miles (by coach) N.W. of Ravenswood Junction (Gt. Northern line). *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

Lincoln Leaders, Clermont Goldfield. *Min.Ref.* Gold, *see* 4151; Ironstone, 5595; Limestone, 660.

Lind and Party's Reef, Old Homestead Diggings. *Min.Ref.* Gold, *see* 4069.

Lindum Mere Sub-artesian Bore. *See under* Artesian Bores. No. 182. *See also under* Coal Bores.

Linedale (J. C.), Warden—

Report on Dee River Gold Discovery. Q.G.M.J., vol. 4, pp. 481, 489, 546, and 601 (1903).

Linklater's Lead, The Springs, Clermont. *Min.Ref.* Coal, *see* 1675; Gold (alluvial), 3336.

Lion Mine, nr. Mt. Perry. *Min.Ref.* Azurite, *see* 172; Malachite, 6191.

—— Mountain, N.N.W. of Stanwell. *Min.Ref.* Limestone (oolitic), *see* 745; Magnetite, 6044.

—— Reef, Charters Towers Goldfield. *Min.Ref.* Barytes, Copper Pyrites, Galena, Gold, Iron Pyrites, and Zinc Blende, *see* 3958.

Lion's Den Tin Mines, Tableland, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 810, 811; Tourmaline, 7847.

Lissner Reef, 41 miles W.S.W. of Charters Towers. *Min.Ref.* Gold, *see* 4065; Iron Pyrites, 5270; Manganese-dioxide, 6433.

Lists. *See under* the following headings:—

Abbreviations.
Artesian Bores.
Art. Water Analyses.
Chambers of Commerce.
Chemical Elements.
Clay Analyses.
Coal Analyses.
Coal Bores.
Coal Fields.
Collieries.
Copper Fields.
Counties.
Crushing Mills.
Customs Duties (Commonwealth).
Discoveries of Gold, Coal, etc.
Districts.
Dredges for Gold, etc.
Gemstones.
Geol. Surv. Publications.
Gold Bores.
Gold Fields.
Govt. Geologists.
Govt. Ming. Jour. Reports.
Inspectors of Mines.
Iron Ore Analyses.
Lime Kilns and Quarries.
Limestone Analyses.
Metal Values in London.
Minerals (short list).
Mineral Exports.
Mineral Fields.
Mineral Imports.
Mining Machinery (values on each field).
Ministers for Mines (ex-).
Opal Fields.
Ore Buyers.
Ornamental Stones.
Plates (maps, etc.).
Ports of Queensland.
References.
Silver-lead Fields.
Smelting Works in Queensland.
Stock Exchanges.
Supplementary Reports.
Tariffs of Smelting Works.
Technical Colleges and Subjects.
Tin Fields.
Under Secretaries for Mines (ex-).
Wages—average rates.
Wardens of Queensland.
Wolfram Fields.

Listowell Downs Opal Mines. Head of Blackwater Cr., trib. of Bulloo R., N.E. of Adavale. Centre about *Lat.* 25° 11′ S.; *Long.* 145° 13′ E. Precious opal discovered here in 1872.

MINERAL REFERENCES: Barytes, *see* 281; Opal, 6961A.

GEOLOGICAL NOTE: The rocks comprise "Desert Sandstone" (Upper Cretaceous) and "Rolling Downs" (Lower Cretaceous). The opal deposits to the south are in sandstone belonging to the first series.

Listowel Lease Bore. *See under* Artesian Bores. No. 315.

Lithia Mica. *Syn.* Lepidolite, *which see.*

Lithium. *Atom.wt.* = 6·94. *Sp.gr.* = 0·59. *Colour,* silver-white. Very light, floats on water.

USES: In its metallic form it has no commercial uses, but its compounds are used in medicine. Many mineral waters contain lithium, and its presence in spring water in Queensland has been recorded, although not officially recognised. *See* Lepidolite, *also* Water Analyses Table, No. 493.

5941 —— carbonate, Spa Water Spring, Helidon. *See under* Water Analyses Table. No. 493.

Lithographic Stone. None of the many limestone deposits known on the eastern portion of the State contain stone which could be adapted for lithographic purposes. Palæozoic limestones are either too irregular in structure, too coarse in texture, or too impure in composition to be of any use whatever. Mesozoic coal measures sometimes contain beds of a fine calcareous mudstone, but which, however, is too siliceous. The Cretaceous Beds of Western Queensland offer some prospects, as the strata in this series of rocks are regularly bedded and frequently contain limestones. Some of the numerous wells which have been sunk for artesian water have passed through limestones, but the operations of boring with percussion drills grind the material to sand and mud, and no opinion can be expressed on the character of the beds or the suitability of the stone for lithographic purposes. The Tertiary deposits of limestone to the north-east of the State might also be examined for lithographic stone, as they are of comparatively recent formation and are probably very much more free from alteration and crystallisation than the older limestones, and therefore may be expected to be more finely granular and compact.

Lithomarge. *Var.* Kaolin, *which see.*

Lithophyses, as chalcedonic pseudomorphs. *See* Chalcedony. *Note.*—At Tambourine Mt., South-eastern Queensland, they occur about 9 inches in diameter

Littabella Creek, 20 miles N.W. of Bundaberg. *Min.Ref.* Coal, *see* 1791A.

Little Beatrice R. (or Adam's Cr.), Jordan Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220; Ilmenite, 4893.

—— Beauty M.L. (568), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2206; Limonite, 5866; Malachite, 6267; Redruthite, 7290.

—— Cr., between Arthur's Cr. and Burdekin Downs Stn. *Min.Ref.* Coralline Limestone, *see* 723.

—— J. Boden Bore. *See under* Artesian Bores. No. 413.

—— Liverpool Range, 5 miles W. of Rosewood Rail. Stn. *Min.Ref.* Tripolite, *see* 7030A

—— Oakey Cr., Kangaroo Hills Mineral Field. *Min.Ref.* Ilmenite, *see* 4899A; Rutile, 7334.

—— River, br. of Gilbert R., 30 miles E. of Croydon. *Min.Ref.* Agate, *see* 1369; Carnelian, 1386. NOTE: Agates are found in great abundance in this locality.

—— ——, 31 miles S.W.byW. of Laura Rail. Stn. *Min.Ref.* Azurite, *see* 201A; Bornite, 419A; Cinnabar, 1544; Copper Pyrites, 2177; Hematite, 4720A; Jasper, 5640A; Limonite, 5846; Malachite, 6244A; Redruthite, 7280A.

Little River Coalfield—

SITUATION: *See maps,* Pls. 8, 9. The Field is about 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line), and about 75 miles W.byS. of Cooktown. *Co.* Mossman; *Dist.* Cook. Centre about *Lat.* 15° 40′ S.; *Long.* 144° 10′ E.

DISCOVERY: Coal-bearing beds were observed here by Mr. Norman Taylor in 1872.

MINERAL REFERENCE: Coal, *see* 1613-1617.

GEOLOGICAL NOTE: The oldest rocks in the district are slates and greywackes, altered by intrusions of porphyries, felsites, etc., and containing gold-bearing quartz reefs. The coal measures of Upper Bower Formation (Permo-Carboniferous) rest unconformably on the slates, etc., and contain coal seams of good quality.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 11 (1882), 91 (1893), 180 (1902), 222 (1910). *See under* Geol. Surv. Pub. List for title.

—— Susie Mine, Dry River. *Min.Ref.* Fluorspar, *see* 2668.

—— Wanderer Reef, Nuggety Gully, Mt. Britten Goldfield. *Min.Ref.* Calcite, *see* 520; Gold, 4187.

—— Wonder Mine, Cooktown. *Min.Ref.* Picotite, *see* 7583.

—— —— M.L. (258), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1512; Copper (native), 1986; Cuprite, 2412; Limonite, 5812.

—— —— Mine, Mt. Cannindah. *Min.Ref.* Gold, *see* 3658; Silver, 7444.

—— —— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4513.

—— —— ——, Norton Goldfield. *Min.Ref.* Copper Pyrites, *see* 2292; Gold, 4280; Iron Pyrites, 5379; Mispickel, 6793; Silver, 7525; Zinc Blende, 8196.

—— —— Opal Mine, Kyabra Opal Field. *Lat.*, 26° 40′ S.; *Long.*, 142° 43′ E. *Min.Ref.* Opal (precious), *see* 6947.

Little's (G.H.) Sub-artesian Bore. *See under* Artesian Bores. No. 361.

Liverpool Cr. and Cowley Br. Tramlines, S. of Mourilyan (junction of). *Min. Ref.* Steatite, *see* 7675A.

Livingstone Co. Port Douglas Dist. *See map,* Pl. 2.

—— Reef, S.E. of Mt. Leyshon. *Min.Ref.* Copper Pyrites, *see* 2220; Galena, 2922; Gold, 3977; Iron Pyrites, 5219.

Lizard Island, near Cooktown. The centre about *Lat.* 14° 40′ S.; *Long.* 145° 28′ E. *Min.Ref.* Tourmaline, *see* 7857.

Llankelly Creek, trib. of Coen R., Coen Goldfield. *Min.Ref.* Gold (alluvial), *see* 3208.

—— Mine, Coen Goldfield. *Min.Ref.* Gold, *see* 3695; Iron Pyrites, 5029.

Llanrheidol Lease Bores. *See under* Artesian Bores. No. 316.

Lobb's or Yard's Bore. *See under* Artesian Bores. No. 179.

Locharoch Bore. *See under* Artesian Bores. No. 319.

Lochingar Bore. *See under* Artesian Bores. No. 154.

Lochinvar Prov. Goldfield *See maps,* Pls. 8, 9. The field is about 43 miles W.byN. of Port Stewart. *Co.* Coen; *Dist.* Cook. Centre about *Lat.* 14° S.; *Long.* 143° 5′ E. *Min.Ref.* Gold, *see* 3712A.

Locket Cr., Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 754; Gold, 3173.

Lockhardt River, N.N.W. of Hayes's Prov. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3243B.

Lockwood Bore. *See under* Artesian Bores. No. 205.

Loddon Bore. *See under* Artesian Bores. No. 250.

Lode Cr., trib. of Sugarloaf Cr., Stanthorpe. Heads close under Dividing Range in Block 352, runs W. for ½ mile, and thence S. to its junction with Sugarloaf Cr., about 5½ miles E.byS. of Stanthorpe. Length 2 miles.

MINERAL REFERENCES: Amethyst, *see* 7168; Beryl, 293; Cairngorm, 7176; Cassiterite, 985, 987-990; Diamond, 2575; Garnet, 3117; Hyacinth, 8233; Molybdenite, 6849; Rock Crystal, 7189; Sapphire, 2348; Spinel, 7578; Stibnite, 7634; Topaz, 7793; Tourmaline, 7858; Wolfram, 7987, 7988; Zircon, 8233.

—— —— Tin Mine (Blocks 351 and 352), head of Lode Cr., Stanthorpe. *Min. Ref.* Cassiterite, *see* 988; Molybdenite, 6849; Wolfram, 7988.

Lode Tin. *See* Cassiterite.

Logan. (Report on Sinking for Coal in District of). By Wm. Fryar, Inspector of Mines. *See under* Gov. Min. Jour. Special Reports, No. 38.

Logan Par. of (Sel. 137, Pors. 7 and 137), N. of Beaudesert. *Min.Ref.* Coal, *see* 1779, 1779A, 1784.

Logan River. Heads at Mt. Lindsay, in the MacPherson Range, and flows N.E. into Moreton Bay, its mouth being 8 miles E.N.E. of Beenleigh. Length about 80 miles. *Min.Ref.* Coal, *see* 1784; Amethyst, 7173.

—— Village (Rail. Stn.), 27 miles S. of Brisbane. *Min.Ref.* Coal, *see* 1763, 1764, 1785-1790. *See also* Supplementary Report No. 126.

—— —— Bores. *See under* Coal Bores.

—— Lease, Grasstree Goldfield. *Min.Ref.* Gold, *see* 4114.

Logie Plains Sub-artesian Bores. *See under* Artesian Bores. Nos. 32, 96, 317.

Löllingite. *Syn.* Prismatic Mispickel. *Compo.,* Arsenide of iron. *Colour,* silver-white, steel-grey. Metallic. *H.* = 5-5·5. *Sp.gr.* = 7-7·4. *Contents* (*max.*), Arsenic 72 per cent.

5942. ——. Biggenden Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58½ miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.M.

Lolworth Creek. Heads at Lake Cargoon, about 85 miles W. of Charters Towers, and flows E.N.E. for 90 miles to enter the Burdekin R., 10 miles N. of Charters Towers. Tribs., Allingham and Fletcher Creek and Eumara Lakes.

MINERAL REFERENCES: Augite, *see* 141; Felspar, 2640; Magnetite, 6008.

London Lease (673), Gympie Goldfield. *Min.Ref.* Gold, *see* 4457.

—— P.C. (Lease 399), Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4033.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4513.

—— ——, Elphinstone Cr., Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4023; Iron Pyrites, 5245.

—— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1098.

—— —— ——, nr. Cemetery, Stanthorpe. *Min.Ref.* Cassiterite, *see* 991.

Lone Star Reef, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4051.

Long Gully, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

—— Hill Gold and Silver Mine, Scrubby Cr., S. of Mackay. *Min.Ref.* Cerussite, *see* 1287; Minium, 6632; Mispickel, 6767.

—— Island, Fitzroy R., nr. Rockhampton. *Min.Ref.* Limestone, *see* 683.

—— Paddock Bore. *See under* Artesian Bores. No. 159.

—— Tunnel Mine, Coen Goldfield. *Min.Ref.* Gold, *see* 3696; Mispickel, 6676.

—— —— and 2 N. Mines, Kilkivan Goldfield. *Min.Ref.* Native Arsenic, *see* 100; Calcite, 552; Gold, 4402, 4403; Manganese-dioxide, 6490.

—— ——. Norton Goldfield. *Min.Ref.* Copper Pyrites, *see* 2293; Iron Pyrites, 5380.

Longamundi Group of Copper Mines, Dugald R., Cloncurry. *Includes* Mavis (315) and Magnet (450) M. Leases, Two Sports' M.F. (2874), and Patchwork M.C. (349), etc.

Mineral References: Azurite, *see* 151, 152; Biotite, 301; Calcite, 448; Chlorite, 1418; Native Copper, 1973; Copper Pyrites, 2061; Cuprite, 2380; Ilmenite, 4880; Ironstone, 5480; Limonite, 5743, 5744; Malachite, 6072-6074; Redruthite, 7204; Tile Ore, 2493.

Longland's Bore. *See under* Artesian Bores. No. 225.

Longreach (on Central line)—

Situation: *See maps*, Pls. 18, 19. 428 miles (by rail) W. of Rockhampton. *Co.* Portland; *Dist.* Mitchell. *Lat.*, 23° 26′ S.; *Long.*, 144° 15′ E.

Railway Base for Jundah Opal Mines in the Opalton Mineral Field.

Population: 3,000 (*Pugh's Almanac*, 1913).

Geological Note: Longreach is situated in the Great Western Queensland Artesian Basin. The rocks are sandstones, etc., belonging to the Rolling Downs Formation (Lower Cretaceous), in which there are several artesian water beds. A coal seam 3 feet thick is said to have been found in Spencer's (Rosedale) Bore, 8 miles from the town. *See* G.S.Q. Pubs. Nos. 101, 121 for details.

Warden: Stationed at Longreach. Inspector of Mines: Stationed at Rockhampton.

General Information: Consult *Pugh's Almanac; Queensland Post Office Directory; Post and Telegraph Guide; Longreach News.* Official Monthly News, Consult *Queensland Government Mining Journal* (Brisbane).

—— Environs Sub-artesian Bores. *See under* Artesian Bores. No. 318.

—— Town Bore. *See under* Artesian Bores. No. 113.

Looking Glass Hill, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

Lord John's Swamp (Lucky Valley Goldfield), on road to Maryland, 12 miles S.S.E. of Warwick. Gold specimens found here in 1852 (Meston).

—— Kitchener Mine, Gilberton. *Min.Ref.* Gold, *see* 3830.

—— Nelson Mine, Yarrabil Cr., Gebangle. *Min.Ref.* Gold, *see* 3578; Iron Pyrites, 4980.

—— Nolan Claim, Stanthorpe. *Min.Ref.* Cassiterite, *see* 991a; Wolfram, 7986a.

—— —— (late Queen) Reef, Bee Cr. Diggings. *Min.Ref.* Galena, *see* 3005a, 4101b.

—— Roberts' Mine (Colley's), Gilberton. *Min.Ref.* Gold, *see* 3829, 3830; Telluride of Gold, 7701.

—— —— (Johannesburgh) Reef, Hamilton Goldfield. *Min.Ref.* Galena, *see* 2741a; Gold, 3705; Iron Pyrites, 5031.

Lord's (R.S.) Sub-artesian Bore. *See under* Artesian Bores. No. 361.

—— Tableland, 28 miles S.E. of Clermont. *Min.Ref.* Jasper, *see* 5644.

Lorne Bore. *See under* Artesian Bores. No. 411.

—— West Bore. *See under* Artesian Bores. No. 242.

Lothair's Sub-artesian Bore. *See under* Artesian Bores. No. 194.

Lottie Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1047A; Copper Pyrites, 2209A; Fluorspar, 2666A.

Loughman Bros.' Bore. *See under* Artesian Bores. No. 290.

Louisa Gully, Talgai Goldfield. *Min.Ref.* Gold, *see* 3253.

—— Lode, Gigoomgan Stn. *Min.Ref.* Chrysocolla, *see* 1537.

—— N. Extd. Mine, Gympie Goldfield. *Min.Ref.* Gold, *see* 4458.

—— Mine, Talgai Goldfield. *Min.Ref.* Copper Pyrites, *see* 2198; Ferro-Calcite, 577; Galena, 2842; Gold, 3852; Iron Pyrites, 5122.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4458, 4515.

—— ——, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3680.

—— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1099; Galena, 2862.

Lovely Ethel Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1048.

Lowdon Bore. *See under* Artesian Bores. No. 348

Lower Camp, Miclere, Clermont Goldfield. *Min.Ref.* Coal Bands, *see* 1673; Gold (alluvial), 3286.

—— ——, Ravenswood Goldfield. *Min.Ref.* Muscovite, *see* 6894.

—— Cape (Capeville), Cape R. Goldfield. *Includes* Chinaman's Gully, Gahn's Flat, Milkonan's Point, Red Hill, between Rocky and Sandy Crs., and Bluff, Canton, Pot Hole, and White Hill Leads. *Min.Ref.* Gold (alluvial), *see* 3265.

—— Flinders. *Min.Ref.* Actinolite, *see* 4854.

—— Fullarton Bore. *See under* Artesian Bores. No. 161.

—— Mountain Cr. Bore. *See under* Artesian Bores. No. 379.

—— Terringa Sub-artesian Bore. *See under* Artesian Bores. No. 361.

—— Tunis Bore. *See under* Artesian Bores. No. 379.

—— Walker's Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 376.

—— Yanko Bore. *See under* Artesian Bores. No. 379.

Lowood, 45 miles (by rail) W.byS. of Brisbane. *Min.Ref.* Garnet, *var.* Pyrope, *see* 3168; Hornblende, 4841; Ilmenite, 4908.

Lucas (Greysteel) Sub-artesian Bore. *See under* Artesian Bores. No. 264.

Lucinda Point (formerly Dungeness).

Situation: *See maps*, Pl. 16, 17. Sixty miles N.W.byW. of Townsville. *Co.* Cardwell; *Dist.* Kennedy North. *Lat.*, 18° 30′ S.; *Long.*, 146° 24′ E.

Port for the Ingham and Kangaroo Hills Mineral Fields.

Harbourage: The jetty is capable of accommodating large steamers, 18 ft. of water being available at L.W.S.

Geological Note: The country for many miles around is made up of recent deposits of alluvium formed at the delta of the Herbert River.

Geological Publications: *Nil.*

Lucknow P.C., Gympie Goldfield. *Min.Ref.* Gold, *see* 4459.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4516

—— Run Bores. *See under* Artesian Bores. No. 319.

Lucky Downs Diggings (Goldfield). *See map*, Pls. 16, 17. Fifty-six miles S.E. of Einasleigh Rail. Stn. (Etheridge line). *Include* Golden King, Lucky Surprise, Mint, Orient P.C., Try Again, and other gold mines. *Min.Ref.* Gold, *see* 3879A.

—— Fortune Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

—— Hit Lode, Sandy Cr. Tin Mines. *Min.Ref.* Cassiterite, *see* 1151A.

—— Prop. Mine, Charters Towers. *Min.Ref.* Chrysocolla, *see* 1525.

—— Surprise Mine, Lucky Downs Diggings. *Min.Ref.* Gold, *see* 3879A.

Lucky Valley Goldfield—

Situation: *See maps*, Pls. 12, 13. Twelve miles S.S.E. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. Centre about *Lat.* 28° 20′ S.; *Long.* 152° 5′ E.

Discovery: Gold specimen found at Lord John's Swamp in 1852.

Proclamation of Field: First (and only one) gazetted, 12th March, 1869, as follows:—Commencing at the south-west corner of portion 474, bounded thence on the north by a line bearing west three hundred and five chains sixty links; on the west by a line bearing south four hundred chains; on the south by a line bearing east four hundred and forty-nine chains fifty-two links; on the east by a line bearing north two hundred and seventeen chains twenty-five links, thence by a line bearing west forty-six chains twenty-eight links, thence by a line bearing north twenty-nine chains eighty links, thence by a line bearing west thirty-four chains sixty-four links, thence by a line bearing north nine chains twenty-five links, thence by a line bearing west thirty-five chains, thence by a line bearing north thirty-one chains, thence by a line bearing west twenty chains, thence by a line bearing north twenty-eight chains, thence by a line bearing east nine chains fifty links; thence by a line bearing north twenty-eight chains, thence by a line bearing east one chain seventy links, thence by a line north twenty-nine chains fifty links, thence by a line bearing east ten chains thirty links, thence by line bearing north twenty-nine chains ninety links, thence by a line bearing west twenty-nine chains fifty links to the point of commencement.

Area: 16,000 acres (25 sq. miles).

Mineral Statistics: *Included in* "Other Goldfields." *See tables and diagram*, Pls. 36, 46, 46A, 47.

Mineral References: Gold (alluvial), 3251, (reef) 3847; Tellurium, 7706; Silver, 7477A; Lead (Galena), 2841A; Copper (Copper Pyrites), 2197A; Zinc (Zinc Blende), 8106A.

Geological Note: The prevailing rocks are slates and shales.

Geological Publications: *Nil.*

Warden: Stationed at Warwick. Inspector of Mines: Stationed at Gympie.

Ludgate Hill Run Bores. *See under* Artesian Bores. No. 382.

Luge-e-Nor Copper Lode, Culgoa Copper Mines, N.byW. of Kilkivan. *Min.Ref.* Azurite, *see* 261; Cuprite, 2481; Malachite, 6376.

Lukin (Geo. L.). Once Under Secretary for Mines. Term of office, 1878 to 1880.

Lukin Co. Cook Dist. *See map*, Pl. 8.

—— King Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3711; Graphite, 4591.

Lushington Opal Mines, Paroo Mineral Field. Discovered in 1893. *Min.Ref.* Opal (precious), *see* 6958.

Luthrie's Selection Sub-artesian Bore. *See under* Artesian Bores. No. 281.

Luxton's Mine, Wet Cr., California Cr. *Min.Ref.* Galena, *see* 2788; Gold, 3766; Hornblende, 4829; Iron Pyrites, 5072.

Lydianstone. *Var. of* Jasper, *which see.*

Ly-e-Moon Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1100; Wolfram, 8021.

Lynch's Lease, Grass-tree Goldfield. *Min.Ref.* Gold, *see* 4108.

Lynd Copper Mine, Einasleigh R. *Min.Ref.* Cerussite, *see* 1190c; Copper carbonate, 1884; Magnetite, 5985.

—— Co. Cook Dist. *See map*, Pl. 8.

Lynd River. Heads in the Fossilbrook country, and flows N.W. to join the Mitchell R. Length, about 150 miles. Principal tribs., Tate R., Fossilbrook Cr. *Lat.*, 16° 30′-17° 58′ S.; *Long.*, 143° 30′-144° 58′ E. *Min.Ref.* Cassiterite, *see* 831.

—— and Tate Rivers (between). *Min.Ref.* Bronzite, *see* 438; Hypersthene, 4877.

Lyndhurst Co. Cook Dist. *See map*, Pl. 8.

Lyon's Shaft (Por. 158, Moggill), 12 miles S. of Brisbane. *Min.Ref.* Coal, *see* 1765.

Lytton Co. Darling Downs Dist. *See map,* Pl. 12.

Ma Foi M.L. (508), Cloncurry. *Min.Ref.* Azurite, *see* 154; Cuprite, 2388; Malachite, 6084; Tenorite, 7709.

Mabel Cr. Bore. *See under* Artesian Bores. No. 203.

—— Mine, Crow's Cr., Barmundoo Run. *Min.Ref.* Gold, *see* 4243.

Macalister Sub-artesian Bores. *See under* Artesian Bores. Nos. 119, 175.

Macalty's Corner Sub-artesian Bore. *See under* Artesian Bores. No. 118.

Macarthur's Cr. Flows N. into Bowen R., 55 miles S.byW. of Bowen. *Min.Ref.* Coal, *see* 1651.

—— Reef, Mulligan's, Croydon Goldfield. *Min.Ref.* Gold, *see* 3539.

—— Seam, Bowen Coal Field. *Min.Ref.* Coal, *see* 1651.

Macartney's Cr. Bore. *See under* Artesian Bores. No. 181.

Macauley Cr. Copper and Silver Lodes, Kangaroo Hills Mineral Field. *Min.Ref.* Galena, *see* 2977; Redruthite, 7299; Zinc Blende, 8158.

Maccabie's Cr., Talgai Goldfield. *Min.Ref.* Gold (alluvial), *see* 3253.

Macdonald (A. R.). Under Secretary for Mines. Appointed in 1899.

Macdonald Lode, Sellheim Mineral Field. *Min.Ref.* Galena, *see* 3014.

Macdonald Prov. Goldfield—

Situation: *See map,* Pls. 12, 13. The field is about 31 miles W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs.

Discovery: Gold discovered by C. M. and N. Lambert on 16th February, 1905.

Mineral References: Cerussite, *see* 1216B; Galena, 2837A; Gold, 3842B; Silver, 7476A.

Warden: Stationed at Stanthorpe. Inspector of Mines: Stationed at Gympie. Assistant Inspector at Ipswich.

MacFadzen's M.F. (1749), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235K; Calcite, 511A; Chlorite, 1461A; Copper Pyrites 2269F; Iron Pyrites, 5327F; Malachite, 6339N; Tile Ore, 2568B

Macfarlane Bores. *See under* Artesian Bores. Nos. 348, 349.

Macgregor Group of Copper Mines. *See* Wee Macgregor. *See* Plate 23.

Machine Cr., rises in the Boyne Range, and flows easterly into the Boyne R., 15 miles S. of Gladstone. Length, 5 miles. *Min.Ref.* Asbestos, *see* 108; Gold (alluvial), 3376.

—— and Talbot Crs. (between), Etheridge Goldfield. *Min.Ref.* Galena, *see* 2759; Gold, 3742; Iron Pyrites, 5056.

Machinery Act. *See* Inspection of Machinery and Scaffolding Act, 1908.

—— (Government assistance to erect). *See under* Subsidies.

Macintosh Gully, Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

Macintyre Brook, 33 miles W.S.W. of Warwick. *Min.Ref.* Gold (alluvial), *see* 3244.

—— —— and Condamine R. (in watercourses heading from Herries Range, the watershed). Thirty-eight miles W.S.W. of Warwick. *Min.Ref.* Gold (alluvial), *see* 3245.

Mackay—

Situation: *See maps,* Pls. 14, 15. The township is situated on the Pioneer River, 190 miles N.W.byN. of Rockhampton, 658 miles N.N.W. of Brisbane. *Co.* Carlisle; *Dist.* Kennedy South. *Lat.,* 21° 10′ S.; *Long.,* 149° 15′ E.

Port for Eungella, Nebo, and Mt. Spencer Gold and Mineral Fields (Pine Vale Copper and Silver Lodes); Waterhole Creek Gold Workings; Mt. Flora and Mt. Orange Copper Mines; Mt. Barker Silver Mines; and Cattle Creek Copper Workings.

Harbourage: Flat-top Island, about 2½ miles from Mackay off the Coast, affords an anchorage for vessels of large size. The Pioneer River is navigable for vessels of small draught, but in places is dry at low water. The rise and fall of the tides vary from 10 to 12 ft.

Population: 14,893 (Census 1911).

Mackay—*continued:*

RAINFALL: *See under* separate heading.

MINERAL STATISTICS:

Silver,	*see tables,*	Pls. 37, 46, 46A.
Copper,	,,	Pls. 39, 46, 46A.
Lead,	,,	Pls. 38, 46, 46A.

MINERAL REFRENCES: Coal, *see* 1643-1649; Gold, 4119; Limonite, 5887; Oil Shale, 6913A.

GEOLOGICAL NOTE: The rocks of the district consist of recent superficial deposits formed from detritus brought down the Pioneer River. To the north and west the rocks are coal-bearing, probably the equivalent of Permo-Carboniferous Coal Measures of the Dawson-Mackenzie Rivers (Upper and Lower Bowen), but they are much disturbed and altered by volcanic intrusions.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 39, 53, 164, 181, 228, 229. *See under* Geol. Surv. Pub. List for titles.

WARDEN: Stationed at Mackay; INSPECTOR OF MINES: Stationed at Rockhampton.

CHAMBER OF COMMERCE: Sec. F. Clark.

GENERAL INFORMATION: Consult *Pugh's Almanac, Queensland Post Office Directory, Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

TECHNICAL COLLEGE: *See* separate heading "Technical Colleges" for mining subjects taught.

LOCAL NEWSPAPERS: *Mackay Mercury, Mackay Standard,* and *Pioneer.*

—— (on hill nr.) *Min.Ref.* Gold, *see* 4119; Limonite, 5887.

—— Bores. *See under* Artesian Bores. Nos. 64, 320.

Mackay's Mine, Blue Mountains, S.W. of Mackay. *Min.Ref.* Copper Pyrites, *see* 2251; Galena, 3008; Malachite, 6320; Zinc Blende, 8167.

Mackenzie(Par. of), Pors. 25, 60, 63, 64, 67), on Beaudesert Rail. line, S.S.E. of Brisbane. *Min.Ref.* Coal, *see* 1777A-1777C, 1785.

—— Co. Burnett Dist. *See map,* Pl. 4.

—— Gully, Starcke Goldfield. *Min.Ref.* Gold (alluvial), *see* 3200B.

Mackenzie Island, Fitzroy R., Geological Notes. *See* G.S.Q.P. 143, p. 14 (1897).

Mackenzie River. Branch of Fitzroy R., Central Queensland. *See* Pls. 10, 33. *Min.Ref.* Hyalite, *see* 7017; Opal (common), 6985; Coal, 1696; Copper, 1854.

GEOLOGICAL NOTE: The principal rocks of the Mackenzie River are shales, sandstones, tuffs, limestones, and conglomerates. They are divided into—(1) An Upper Freshwater-Marine Series (Clermont); (2) A Freshwater-Marine Series (Upper Bowen); and (3) A Freshwater-Marine-Volcanic Series (Lower Bowen); all belonging to the Permo-Carboniferous System. The area of coal measures here is very great, and one of the coal seams is 20 ft. thick. *See* G.S.Q.P. No. 155 (1901) for details. *See also* List of Maps *under* Department of Mines Publications.

Mackinlay (T. B.), Inspector of Mines.

Report on Montalbion and neighbouring Silver-Lead Mines. Q.G.M.J., vol. 2, p. 131 (1901).

Report on Mungana Mines. Q.G.M.J., vol. 3, p. 476 (1902).

Report on Nymbool (Smith's Cr.) Tin Mines. Q.G.M.J., vol. 3, p. 478 (1902).

Report on Operations at Mt. Perry. Q.G.M.J., vol. 4, p. 315 (1903).

Mackinnon's Bore. *See under* Artesian Bores. No. 389.

Mackunda Cr., on Boulia Road, W.S.W. of Winton Rail. Stn. *Min.Ref.* Pyrolusite, *see* 7122A.

—— Town Sub-artesian Bores. *See under* Artesian Bores. No. 35.

Maclaren (J. Malcolm), B.Sc., etc.

Geological Survey Publications:—

146. On the Stannary Hills Tin Mines, Eureka Creek, Watsonville District, North Queensland. (1900).
150. Annual Progress Report of the Geological Survey for the Year 1899. (1900).
152. On the Geology and Reefs of the Ravenswood Goldfield. (1900).
156. On Queensland Mining and Milling Practice. (1901).
159. Annual Progress Report for the Year 1900. (1901).

Macmillan Cr., 24 miles E. of Georgetown. *Min.Ref.* Copper Ore, *see* 2025B; Galena, 2759B.

MacPherson Range, S. of Brisbane. *Min.Ref.* Opal (common), *see* 6996; Tourmaline, 7869; Tripolite, 7033. *See also under* Supplementary Reports, No. 135.

Geological Note: The base rocks of the range are porphyries, and these have been partly covered by beds belonging to the Walloon Coal Series. In other localities the porphyries have been capped with basalt, and diatomaceous earth deposits occur on the range associated with the latter rock.

—— Reef, Palmer Goldfield. *Min.Ref.* Gold, *see* 3685.

Macrossan Mine, 2 miles E. of Chillagoe Rail. Stn. *Min.Ref.* Actinolite, *see* 4860; Anglesite, 28; Cerussite, 1212; Diallage, 147; Galena, 2791; Manganese-dioxide, 6409; Massicot, 6526; Pyrolusite, 7117.

Mactaggart and Party's Sel. (2447), W. of Kilkivan. *Includes* The Commotion, Central, and Bloodworth Cinnabar Lodes. *Min.Ref.* Cinnabar, *see* 1550-1555.

Macunda Cr. Bore. *See under* Artesian Bores. No. 181.

Madam Ross Mine, Palgrave Goldfield. *Min.Ref.* Gold, *see* 3848.

Madras Silver-Lead Mine, 1 mile N.E. of Ashtonville. *Min.Ref.* Galena, *see* 2827A.

Mafeking Colliery, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1740A, 1740B.

—— P.C. G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2890; Iron Pyrites, 5177; Gold, 3911.

—— Reef, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, and Iron Pyrites, *see* 3959.

Magazine Face, Mungana. *Min.Ref.* Malachite, *see* 6239.

Magdala Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1049; Hematite, 4729; Limonite, 5872.

Magenta Stn., 8 miles E. of Capella Rail. Stn. *Min.Ref.* Dolomite, 2589A; Lydianstone, 5654B; Magnesite, 5951A.

Maggie's Cr., Cloncurry. *Includes* Mt. Elliott and Agate Downs Group of Copper Mines. *Min.Ref.* Atacamite, *see* 133; Calcite, 495; Chalcanthite, 1327; Chalcedony, 1343; Copper Pyrites, 2209; Cuprite, 2454; Gold, 3876; Iron Pyrites, 5135; Limonite, 5871; Malachite, 6273, 6274; Selenite, 4642; Tile Ore, 2559, 2560; Tenorite, 7725-7727.

Magic Opal Mine, 30 miles N.W. of Jundah Opal Field. *Min.Ref.* Precious Opal, *see* 6958A.

Magnesian Limestone. *See under* Calcite and Dolomite.

Magnesite. *Syn.* Brown Spar. *Compo.*, Carbonate of magnesia. *Colour*, usually white. *H.* = 3·7-4·5; *Sp.gr.* = 3. *Contents* (*max.*), Carbon-dioxide 52 per cent., Magnesia 47 per cent.

Geological Note: Magnesite deposits of limited extent are of frequent occurrence in basalt and serpentine country. In some localities the mineral occurs in a very pure state, but the known quantities available are too small to be considered worthy of serious attention. For uses *see note under* Magnesium.

5943. ——. *Assoc.with* Copper Pyrites, Malachite, Chrysocolla, Iron Pyrites, Limonite, and Ironstone, in kaolinised schist. *Loc.* Mt. Cuthbert 1 and 2 S. M.Ls. (257 and 294), Mt. Cuthbert Group, 19 miles S.W. of Coolullah, 63 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 321, 322 (1908).

5944. ——. Scrubby or Paradise Cr., 8 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* **Burnett.** *Ref.* L.C.B.

5945. ——. Six-mile Cr., nr. proposed railway line, 4 miles from Charleston Rail. Stn., Etheridge Goldfield. *Co.* Gilbert; *Dist.* **Cook.** *Ref.* B.D.

5946. ——. In large seam. In bed of Cooby Cr., 6 miles N.W. of Spring Bluff Rail. Stn., 16 miles (by rail and road) N. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* B.D.

5947. ——. Newellton (Silver Valley), 6 miles E.S.E. of Irvinebank, 10 miles S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 59 (1900).

5948. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Prospector's Gully, nr. Top Camp, McMaster's, 14 miles N.W.byN. of Clermont Rail. Stn., Clermont Goldfield. *Co.* Dickson; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 201, p. 61 (1906).

5949. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Yankee Camp, ¾-mile S.E. of Top Camp, McMaster's (*ante*). *Ref.* G.S.Q. Pub. 201, p. 65 (1906).

5950. ——. *Assoc.with* Gold, Iron Pyrites, Siderite, and Dolomite, in quartz. *Loc.* Biddy Walsh Reef, Clermont, McDonald Flat, 3 miles S.S.E. of Clermont Rail. Stn., Clermont Goldfield. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 176, p. 18 (1902).

5951. ——. *Assoc.with* Gold, Sapphire, Spinel, Hornblende, Tourmaline, Garnet, Zircon, Amethyst, Cairngorm, Chalcedony, Jasper, Rutile, Topaz, Diamond, Magnetite, and Ilmenite, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Creeks, Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton. *Cos.* Clermont and Plantagenet; *Dist.* Leichhardt. *Refs.* G.S.Q. Pubs. 81 (1892), 125 (1897), and 172 (1902).

5951A. ——. As loose pebbles and boulders in basaltic soil. *Assoc.with* Lydianstone, Agate, Chalcedony, and Rock Crystal. *Loc.* Magenta Station, 8 miles E. of Capella Rail. Stn. (Clermont-Blair Athol line). *Co.* Talbot; *Dist.* Leichhardt. *Ref.* B.D.

5952. ——. Main Range, 6 miles W. of Helidon Rail. Stn., 78 miles (by rail and road) W.byS. of Brisbane. *Co.* Churchill; *Dist.* **Moreton.** *Ref.* P.R.S.Q., vol. 4, p. 74 (1887).

5953. —— (in small masses). *Assoc.with* Calcite, Chabazite, and Natrolite, in decomposed basalt. *Loc.* On Pors. 27 and 81v, Forest Gate Farm, Mt. Davidson, 5 miles E.S.E. of Toowoomba. *Co.* Churchill (*ante*). *Ref.* B.D. and Q.G.M.J., vol. 12, p. 174 (1911).

5954. ——. Church Hill, 2 miles S. of Ipswich. *Co.* Stanley; *Dist.* Moreton. *Ref.* L.C.B.

5955. ——. *Assoc.with* Limestone, Basalt, and Volcanic Tuff, probably in a fault. Limestone Hill, Ipswich, 24 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* B.D.

5956. ——. *Assoc.with* Gold, Chalcedony, and Serpentine, in gossan. *Loc.* Oaks View Consolidated Mine, 4 miles N. of Oaks Stn., 45 miles (by road) N.N.W. of Rockhampton. *Co.* Liebig; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 205, pp. 16, 17 (1906).

5957. ——. Dinner Cr., 5 miles N.W.byN. of Stanwell Rail. Stn. (Central line). *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

5958. ——. Ironpot Mt., Ironpot Cr., 12 miles N.N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Analysis:* Silica = 7·23 per cent., Carbonic Acid = 49·08 per cent., Peroxide of Iron = 1·66 per cent., Magnesia = 43·70 per cent., Lime = traces. 101·67.

5959. ——. Tooker's Claim, Mt. Wheeler, 3 miles E.N.E. of Cawarral, 26 miles (by rail and road) N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* O.R.

5960. ——. Sawpit Cr., 1 mile N. of Stanwell Rail. Stn., 17 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

5961. ——. Stewart's Cr., 1 to 3 miles W.N.W. of Stanwell Rail. Stn., 16 to 20 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

5962. ——. In masses. The Pointers, nr. Yaamba, 13 miles N.W.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* Q.M.

5963. ——. As veins in decomposed igneous rocks. *Loc.* Railway Cuttings, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 195 (1904).

5963A. ——. As lodes in Serpentine, varying in thickness up to about a foot. In railway cutting near Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* B.D.

5964. Magnesite. *Assoc.with* Gold and Calcite, in quartz. *Loc.* Waratah Lease, Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 7 (1902).

5964A.——. As a lode formation of inferior quality, about 6 inches thick, in diabasic rock. On Chatsworth road, near Sel. 615, about 3½ miles N.E. of Gympie. *Par.* Gympie; *Co.* March; *Dist.* Wide Bay. *Ref.* B.D.

Magnesium. *Atom.Wt.*, 24·32; *Sp.gr.*, 1·75. *Colour*, silver-white.

MINERALS :—

Aluminate. *See* Spinel.

Carbonates. *See* Dolomite, Magnesite.

Sulphate. *See* Epsomite.

Silicates. *See* Augite, Actinolite, Asbestos, Bronzite, Biotite, Chlorite, Clinochlore, Chrysolite, Chrysotile, Diallage, Hornblende, Hypersthene, Muscovite, Noumeaite, Olivine, Penninite, Pyrope, Serpentine, Talc, Tourmaline, Vermiculite, Viridite.

MINERAL NOTE: Serpentine country exists some miles to the south-west of Gympie, to the north of Rockhampton, in the Kilkivan District, and in many other places in the State. Magnesite is found as irregular patches and veins in the serpentine, and also with Dolomite in decomposed basaltic rocks. Epsomite is found commonly as an efflorescence on shales and in old mine workings.

USES: The metal is used in refining steel, in making a remarkably light and strong alloy with zinc, and in producing an intense white light for photographic and other purposes. When mixed with other ingredients, it produces a brilliant fire in pyrotechnical displays. The compounds, natural and artificial, are variously used as firebricks, furnace linings, boiler coverings, etc., and in the manufacture of dyes, soaps, paper, medicine, and paints. The principal source is Magnesite, the carbonate, but other minerals, particularly the sulphate and chloride, are also utilised.

Magnesium silicates. *See under* Silicates.

Magnet M.L. (450), Cloncurry. *Min.Ref.* Azurite, *see* 151; Copper Pyrites, 2061; Limonite, 5743; Malachite, 6072; Tile Ore, 2493.

Magnetic Iron Ore. *See* Magnetite.

Magnetic Island. *See maps*, Pls. 16, 17. Cleveland Bay, N. of Townsville. *Lat.*, 19° 10′ S.; *Long.*, 146° 50′ E. *Min.Ref.* Calcite, *see* 502; Gold (alluvial), 3260, (reef) 3997-4001; Iron Pyrites, 5230, 5231; Magnetite, 6011; Orthoclase, 7048; Rock Crystal, 7192.

GEOLOGICAL NOTE: The island is made up of alluvial deposits, altered volcanic rocks (Permo-Carboniferous), together with granite and felsite. The granite forms the great mass of the island, while the volcanic rocks and felsite occupy small areas on the western side. The alluvial deposits occur mostly on the south-western side, nearest to the mainland, but there is also an area on the north side. Reefs occur in the granite, and a number have been found to be gold-bearing. *See* G.S.Q. Pub. No. 75

Magnetic Pyrites. *See* Pyrrhotite.

Magnetite. *Syn.* Magnetic Iron Ore. *Compo.*, Sesquioxide and protoxide of Iron *Colour* and *Streak*, Iron-black. Magnetic, sometimes polar. *H.* = 5·5-6·5; *Sp.gr.* = 4·9-5·2. *Contents* (*max.*), Iron 72 per cent.

MINERAL NOTE: A very large supply of this mineral occurs at Kangaroo Hills, 60 miles inland from Townsville, and large quantities are to be seen outcropping at Glassford Cr., Biggenden, Mt. Lucy, and near Mt. Morgan. Small quantities are known to occur in several localities close to the coast in the Northern, Central, and Southern Districts, and it is found as a constituent of some beach deposits associated with gold, etc. *See* G.S.Q. Pub. No. 190 for details and tabulated information, also Nos 194 and 196.

5965. ——. Corella R., 35 miles E. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref* B.D.

5966. ——. Black Mt. (Mt. Leviathan), at Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 125, p. 59 (1898).

5967. ——. Broken Hill Mine, Cloncurry. *Co.* Beaconsfield (*ante*).

5968. ——. *Assoc.with* Gold and Chlorite, in quartz. *Loc.* Iron Duke Reef, Golden Gate, 4 miles N.W. of Croydon Rail Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 9 (1887).

5969. ——. *Assoc.with* Native Copper, Cuprite, Tetrahedrite, Redruthite, Malachite, Iron Pyrites, Hematite, and Limonite, in schist and quartz. *Loc.* Crusader M.F. (2549) (Crusader Group), Coolullah Run, 68½ miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Assay:* Copper = 5·3 per cent. *Ref.* G.S.Q. Pubs. 10, p. 8 (1885), and 215, pp. 334, 335 (1908).

5970. ——. In sand. McKinlay Ranges, 80 miles S.S.E. of Cloncurry. *Co.* Toorak; *Dist.* Burke. *Ref.* O.R.

5970A. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Anderson Bros.' R.C., Por. 2, Par. of Cracknell, Upper Flinders, Mt. Emu Plains Stn., 62 miles N.N.E. of Hughenden, 55 miles N.W.byW. of Pentland Rail. Stn. (Gt. Northern line). *Co.* Wongalee; *Dist.* Burke. *Ref.* Q.G.M.J., vol. 11, p. 186 (1910).

5971. ——. *Assoc.with* Chloritic Schist. *Loc.* Mickett's Limestone Quarry, Dalesford, 36 miles (by rail) W.S.W. of Bundaberg (Mt. Perry line). *Co.* Bowen; *Dist.* **Burnett.**

5972. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Molangul Reef, about 5 miles S.S.W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* G.S.M.

5973. —— (polarized). *Assoc.with* Gold, Iron Pyrites, and Hornblende. *Loc.* Great Freehold Mine, Mt. Drain, at Mt. Perry. *Co.* Bowen (*ante*). *Ref.* G.S.M.

5974. ——. As black sand. *Loc.* Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.M.

5975. ——. *Assoc.with* Gold, Silver, Lead, and Iron Pyrites, in quartzite. *Loc.* Hannan Silver-Lead Lode, N.E. of Allendale Silver Lode, Chowey Cr., 62 miles (by rail) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Contents: See* No. 3568. *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

5976. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Mispickel, Bismuth (native), Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, Chalcedony, and Epidote. *Loc.* Biggenden Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 60, 1890), 173 (1902), and 194 (1904).

5977. ——. *Assoc.with* Copper carbonate and Calcite, in gossan. *Loc.* W. of Granite Ridge, nr. Mt. Biggenden (*ante*). *Ref.* G.S.Q. Pub. 60, p. 3 (1890).

5978. ——. *Assoc.with* Garnet and Bismuth Ores (octohedrons and dodecahedrons). *Loc.* Mt. Hastings Mine, 2 miles S.E. of Biggenden and 5 miles S.byW. of Degilbo Rail. Stns. (Gayndah Br. line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 173, p. 4 (1902), and G.S.M.

5979. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Copper Pyrites, Native Bismuth, Bismuthinite, and Ironstone, in lode. *Loc.* Don Jon Bismuth Mine, ¼-mile S. of Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 173, p. 4 (1902), and 207, pp. 13, 14 (1907).

5980. ——. *Assoc.with* Tetradymite and Bismuthinite. *Loc.* Don Jon Bismuth Mine (*ante*). *Ref.* A.R., p. 44 (1906).

5981. ——. *Assoc.with* Turgite, in lode. *Loc.* Seabrook's, Oakey Cr., Degilbo, 58 miles (by rail) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* L.C.B.

5982. ——. *Assoc.with* Ilmenite and Zircon, in alluvial deposits. *Loc.* Creeks head of Boyne and Stuart Rivers, 24 miles S.W. of Kingaroy Rail. Stn. (Kilkivan line). *Co.* Fitzroy; *Dist.* Burnett. *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

5983. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in diorite. *Loc.* M.L. (25), Gympie Copper Mines, Gooroomgam Cr., 23 miles N.N.E. of Nanango, 30 miles S. of Kilkivan. *Co.* Fitzroy (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 169, pp. 7, 9 (1901).

5984. ——. *Assoc.with* Copper Pyrites and Iron Pyrites. *Loc.* Nr. Cannindah Stn., 40 miles S.W. of Miriam Vale Rail. Stn., 83 miles (by rail and road) S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. *Ref.* A.R., p. 99 (1907).

5985. ——. *Assoc.with* Copper carbonate and Cerussite, in schist. *Loc.* Lynd Copper Mine, Einasleigh R., 40 miles E.S.E. of Georgetown, 102 miles (by rail) S.S.W. of Almaden Rail. Stn. (Chillagoe line). *Co.* Gilbert; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 134, p. 21 (1898).

5986. ——. In lode. Einasleigh R., 10 miles from Einasleigh Rail. Stn., 112 miles (by rail and road) S.S.W. of Almaden Rail. Stn. (Etheridge line). *Co.* Gilbert (*ante*). *Ref.* O.R.

5986A. Magnetite. *Assoc.with* Copper Pyrites, in quartzite. *Loc.* Teesdale, about 10 miles (by rail) S.W. of Einasleigh (Etheridge line). *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 234, pp. 26, 27 (1911).

5987. ——. *Assoc.with* Cuprite, Tile Ore, Tenorite, Malachite, Azurite, Chrysocolla, and Hematite, in garnet rock. *Loc.* Boomerang Copper Mine, Marble Cr., 1 mile W. of Calcifer (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 69, p. 8 (1891), and 119, p. 36 (1897).

5988. ——. Nr. Boomerang Mine, Marble Cr. (*ante*). *Dist.* G.S.M.

5989. —— (crystals). Harper's Mine, ½-mile E. of Calcifer (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

5990. —— (massive). *Assoc.with* Garnet. *Loc.* Ti-tree Mine, Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

5991. ——. *Assoc.with* Garnet. *Loc.* 8 miles from Koorboora Rail. Stn., 116 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* O.R.

5992. ——. Mt. Cardwell Mine, 5 miles S. of Ord Rail. Stn. (Mt. Garnet line), 117 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

5993. ——. *Assoc.with* Hematite, Limestone, Chert, Garnet, Wollastonite, and Epidote *Loc.* Mt. Lucy, 4 miles W. of Almaden Rail. Stn. (Chillagoe line), 125 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 134, p. 16 (1898), and 196, pp. 6-8 (1905).

5994. ——. Nr. Cathedral Range, 4 miles E.S.E. of Zillmanton Rail. Stn. (Chillagoe line), 143 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*).

5995. ——. As sand. Johnstone R., nr. Geraldton, 130 miles N.W. of Townsville. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 196, p. 12 (1906).

5996. ——. *Assoc.with* Gold, Limonite, Bismutite, Manganese-dioxide, Ruby and Garnet, in alluvial deposits. *Loc.* Agate Cr., br. of Robertson R., 68 miles S. of Georgetown, 21 miles S.S.W. of Charleston, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* L.B. 1, p. 940 (1887).

5997. ——. Gilberton, 24 miles S.byE. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

5998. ——. Gowrie Little Plain, 10 miles N.W.byN. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* O.R.

5999. ——. Por. 1847, Rolleston, Pittsworth, 36 miles (by rail) S.W.byS. of Toowoomba. *Co.* Aubigny (*ante*). *Ref.* G.S.Q. Pub. 194, p. 62 (1904).

6000. —— (massive). Nundubbermere, 13 miles S.W. of Stanthorpe Rail. Stn. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.M.

6001. ——. *Assoc.with* Hematite. *Loc.* Pike's Cr., nr. Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

6002. ——. In quartz. Thulimbah, 30 miles (by rail) S. of Warwick. *Co.* Bentinck (*ante*). *Ref.* O.R.

6003. ——. Glenlyon, 30 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* O.R.

6004. ——. As octohedral crystals in chlorite schist. *Loc.* Hinchinbrook Is., Halifax Bay, 9 miles W.byN. of Lucinda Point. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.M.

6005. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Hematite, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, Chalcanthite, Mispickel, Zinc Blende, Minium, and Cerussite, in quartz lodes, in quartzite and porphyry. *Loc.* Mines at Mt. Garnet, Return Cr., Wild R., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

6006. ——. *Assoc.with* Garnet. *Loc.* E. of Mt. Garnet, E. of Herbert R., and 11 miles S. of Coolgarra Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6007. ——. Newellton (Silver Valley), 10 miles S.W. of Herberton, 10 miles S.E. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

6008. ——. *Assoc.with* Felspar Crystals and Augite, in basalt. *Loc.* Gt. Basalt Wall, N. of Lolworth Cr., about 45 miles W. of Charters Towers. *Co.* Dalrymple; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 11 (1891).

6009. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Limonite, Chalcanthite, Manganese-dioxide, and Talc, in quartz. *Loc.* Mt. Leyshon Mine, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.Q. Pubs. 18, p. 2 (1885), and 73, p. 13 (1891).

6010. ——. *Assoc.with* Iron Pyrites, Malachite, Ironstone, Graphite, Garnet, and Calcite. *Loc.* Double-Barrel Cr. (Manton), 27 miles (by rail) S. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* L.B. 2, pp. 720, 729 (1891).

6011. ——. *Assoc.with* Felspar and Quartz. *Loc.* Magnetic Is., Cleveland Bay, 5½ miles N. of Townsville. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 75, p. 4 (1892).

6012. ——. In basalt. Mt. Black, 9 miles W. of Upper Cape Diggings, 26 miles W.byN. of Cape River Rail. Stn. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 9 (1891).

6013. ——. *Assoc.with* Augite Crystals. *Loc.* Mt. Razorback, Upper Burdekin, about 45 miles W. of Cardwell. *Co.* Gunnawarra; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 6 (1891).

6014. ——. In black sand. On beach, 3 miles from Bowen, 763 miles N.W.byN. of Brisbane. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* A.R., p. 165 (1908).

6015. ——. Beattie's Mine, Kangaroo Hills Mineral Field, 40 miles S.W.by S. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M.

6016. —— (massive). Black Star Lease (116), Kangaroo Hills Mineral Field (*ante*). *Ref.* B.D.

6017. ——. *Assoc.with* Minium and Manganese-dioxide, in lode. *Loc.* Black Star S. Lease (199), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

6018. —— (massive). Hidden Treasure Lease (165), Kangaroo Hills Mineral Field (*ante*). *Assays: See* No. 1241. *Ref.* G.S.M.

6019. —— (massive, copper-stained). *Loc.* Lillie's Shaft, Eastern Lode, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.M.

6020. ——. In lode. Mt. Regner Lease (242), Mt. Regner, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

6021. ——. *Assoc.with* Cassiterite and Topaz, in alluvial deposits. *Loc.* Sandy and Prospector's Creeks, tribs. of Oaky Cr., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

6022. —— (massive). At the Gorge, Portal Cr., br. of Douglas R., Upper Burdekin R., about 28 miles S.W. of Cardwell. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M.

6023. ——. As black sand. Black Waterhole Cr., 2 miles N.byE. of Hazledean, 24 miles S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 164, p. 10 (1901).

6024. ——. In sand. Mt. Gregor, 2½ miles S.E. of Mt. Toby, 2½ miles N.N.E. of Mirani Rail. Stn., Mackay line. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* L.B. 1, p. 94 (1878).

6025. ——. *Assoc.with* Ilmenite and Quartz. *Loc.* In watercourses, Neilson's Cr., nr. Mt. Jukes, 18 miles W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 53, p. 9 (1889).

6026. ——. *Assoc.with* Ilmenite, Cassiterite, and Zircon. *Loc.* Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Ref.* O.R.

6026A. ——. In diallage rock. Freedom of Contract No. 3 Mine, between Mt. Pleasant and Ruby Creeks, 6½ miles N.E.byN. of Withersford Rail. Stn., and 8 miles W. of Anakie Rail. (Central line). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 81, p. 4 (1892).

6027. ——. Peak Vale, 18 miles S.S.W. of Clermont. *Co.* Clermont (*ante*). *Ref.* B.D.

6028. ——. *Assoc.with* Gold and Limonite, in quartz and lydianstone. *Loc.* Oswald Mine, between Retreat and Ruby Creeks, 8 miles N.N.W. of Anakie Rail. Stn. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 127, p. 3 (1898).

6029. ——. *Assoc.with* Gold, Sapphire, Spinal, Tourmaline, Hornblende, Garnet, Zircon, Amethyst, Cairngorm, Chalcedony, Jasper, Topaz, Diamond, Rutile, Ilmenite, and Magnesite, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Creeks, Anakie Sapphire Fields, 193 miles (by rail) W. of Rockhampton. *Cos.* Clermont and Plantagenet; *Dist.* Leichhardt. *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), and 172 (1902).

6029A. Magnetite. *Assoc.with* Iron Pyrites, Pyrrhotite, Hematite, Limonite, Copper Pyrites, Malachite, and Azurite, in granite and slate. *Loc.* Rodger's Back Sel. (1430), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, pp. 41, 42 (1910).

6030. ——. *Assoc.with* Gold, Garnet, Zircon, and Tourmaline, in alluvial deposits below basalt. *Loc.* Basalt Hill Diggings, 3 miles N. of Borilla Rail. Stn. (Central line), 10 miles (by rail and road) W. of Anakie. *Co.* Plantagenet; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 172, p. 7 (1902).

6031. ——. *Assoc.with* Pleonaste. *Loc.* Moogerah, Main Range, Fassifern, 6 miles W.N.W. of Dugandan Rail. Stn. (Fassifern Br. line). *Co.* Churchill; *Dist.* **Moreton.**

6032. ——. As black sand. Humpybong, Moreton Bay, 9 miles N.E. of North Pine Rail. Stn., 26 miles (by rail and road) N. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.M.

6033. ——. *Assoc.with* Gold, in black sand. *Loc.* Currumbin Cr., 1 mile N. of Point Danger, 70 miles (by rail and road) S.byE. of Brisbane (South Coast line). *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 51, p. 5 (1889).

6034. ——. *Assoc.with* Gold, in black sand. *Loc.* mouth of Nerang Cr., Tweed Heads, 49 miles (by rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 51, p. 5 (1889).

6035. ——. *Assoc.with* Copper (native), Copper Pyrites, Cuprite, Tile Ore, Malachite, Azurite, Iron Pyrites, Hematite, Limonite and Calcite. *Loc.* Many Peaks Copper Mines, Deception Cr., about 54 miles (by rail) S. of Gladstone, Boyne Valley Br. line. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 150, p. 8 (1900).

6036. ——. *Assoc.with* Copper Pyrites, Bornite, Cuprite, Tenorite, Malachite, Azurite, Galena, Zinc Blende, Hematite, Garnet, Chlorite, and Calcite. *Loc.* Glassford Cr. Copper Mines, Glassford Cr., about 8 miles S.W.byW. of Many Peaks Rail. Stn. (Boyne-Valley line), about 62 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 150, p. 5 (1900), and 194, p. 28 (1904).

6037. ——. As nodules, in garnet rock containing Copper Pyrites, Actinolite, and Epidote. *Loc.* Shaft above Blue Bag, Glassford Creek Copper Mine, Glassford Cr. (*ante*). *Ref.* G.S.Q. Pub. 150, p. 6 (1899), and 194, p. 30 (1904).

6038. ——. Mt. Alma Stn., Calliope R., 30 miles S.W.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* L.C.B.

6039. ——. Mt. Grim, 3½ miles W.S.W. of Mt. Alma Stn., 31 miles S.W.byW. of Gladstone (*ante*). *Ref.* G.S.Q. Pub. 194, p. 24 (1904).

6040. ——. *Assoc.with* Hematite. *Loc.* Por. 10v, Pemberton, 3½ miles S. of Marblestone Crossing, 24 miles S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Analysis:* Iron = 67·4 per cent. *Ref.* G.S.Q. Pub. 194, p. 26 (1904).

6041. ——. *Assoc.with* Hematite, in limestone. *Loc.* Por. 22v, Pemberton, Boyne R., 2 miles E.N.E. of Marblestone Crossing, 19 miles S. of Gladstone. *Co.* Clinton (*ante*). *Analysis:* Iron = 64·9 per cent. *Ref.* G.S.Q. Pub. 194, pp. 25, 26 (1904).

6042. ——. *Assoc.with* Hematite, Epidote, and Garnet, in slate. *Loc.* ½-mile S.S.E. of Targinie Head Stn., 9 miles W. of Gladstone. *Co.* Clinton (*ante*). *Analysis:* Iron = 64·9 per cent. *Ref.* G.S.Q. Pub. 194, p. 23 (1904).

6043. ——. In beach sand. *Loc.* Nr. Flora Point, Rodd Peninsula, 25 miles E.S.E. of Gladstone. *Co.* Flinders; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 130, p. 2 (1898).

6044. ——. In basalt. Lion Mt., 6 miles N.N.W. of Stanwell, 22 miles (by rail and road) W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis.

6045. ——. *Assoc.with* Garnet Rock. *Loc.* Olsen's Caves (Por. 22v, Fitzroy), nr. Mt. Etna, 15 miles N.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 194, p. 14 (1904).

6046. ——. *Assoc.with* Hematite. *Loc.* Por. 95v, Par. of Fitzroy, vicinity of Olsen's Caves, nr. Mt. Etna (*ante*). *Analyses:* Iron = 67 and 73 per cent. *Ref.* G.S.Q. Pub. 194, p. 13 (1904), and G.S.M.

6046A. ——. Between Caves Hotel and Olsen's Caves, nr. Mt. Etna (*ante*). *Ref.* G.S.Q. Pub. 86, p. 2 (1892).

6047. ——. In garnetiferous limestone. *Loc.* Por. 973, Par. of Gracemere, about 1 mile N.W. of Kabra Rail. Stn. (Central line), 12 miles (by rail and road) W.S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Analysis:* Iron = 66 per cent. etc. *Ref.* G.S.Q. Pub. 194, p. 14 (1904).

6048. ——. *Assoc.with* Hematite. *Loc.* Iron Island, Duke Group, 40 miles N.E. of St. Lawrence, nr. Broadsound. *Co.* Palmerston; *Dist.* Port Curtis. *Analyses* of Sample and Specimens: Water = 0·13, 0·46 per cent., Silica = 2·51, 1·73 per cent., Alumina = 2·95, 2·71 per cent., Iron = 64·72, 63·94 per cent., Lime = 2·85, 5·53 per cent., Magnesia = 1·07, trace per cent., Phosphorus = 0·065, trace per cent., Titania = nil *Ref.* G.S.Q. Pub. 194, pp. 9, 10 (1904).

6049. —— (massive). *Loc.* Marble Island, Duke Group, 45 miles N.E.byE. of St. Lawrence, near Broadsound (*ante*). *Ref.* G.S.M.

6050. ——. In beach sand. Percy Island (No. 2), Northumberland Group, 60 miles N E of St. Lawrence, near Broadsound (*ante*). *Ref.* G.S.M

6051. ——. *Assoc.with* Hematite and Copper Pyrites, in quartz and limestone. *Loc.* Iron Knob, Stanage Point, 37½ miles E.N.E. of St. Lawrence, nr. Broadsound (*ante*). *Analysis:* Iron = 60 per cent ; Phosphorus = nil. *Ref.* G.S.Q. Pub. 194, p. 12 (1904).

6052. ——. *Assoc.with* Malachite and Azurite. *Loc.* Kroombit Cr., 5 miles above Kroombit Head Stn., 55 miles S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

6053. ——. *Assoc.with* Copper carbonate, in lodes, in serpentinous rock. *Loc.* King's Copper Sel., Rainbow Cr., nr. Callide Cr., 5 miles S.W. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 80, p. 1 (1891).

6054. ——. *Assoc.with* Copper Pyrites, Copper carbonate, Iron Pyrites, Hematite, and Manganese-dioxide. *Loc.* Callide or 5-Mile Copper Mines, Kroombit, 50 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 194, p. 27 (1904).

6054A.——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Iron Pyrites, Hematite, and Limonite, in gossan lode. *Loc.* M.L. (262), Kroombit Copper Mines, 4¼ miles E.S.E. of Kroombit Head Stn., 56 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 98 (1906).

6055. ——. As large outcrop, and as small lodes. *Loc.* Head of Alma Cr., Don R., 15 miles S.S.E. of Mt. Morgan Rail. Stn., 39 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* B.D.

6056. ——. In slate. *Loc.* Constitution Hill, E. side of Dee R., 3 miles N.E. of Mt. Morgan, 27 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Analysis:* North End, Iron = 55·80 per cent.; Phosphorous = trace. South End, Iron = 62·40 per cent.; Phosphorous = 0·08 per cent. *Ref.* G.S.Q. Pub. 194, p. 15 (1904).

6057. ——. *Assoc.with* Limonite and Hematite. *Loc.* Iron Gully, br. of Boulder Cr., 6 miles W.S.W. of Mt. Morgan Rail. Stn., 30 miles S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Analysis:* Iron = 62·65 per cent.; Phosphorus = 0·167. *Ref.* G.S.Q. Pub. 194, p. 16 (1904).

6058. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Hematite, Limonite, Göthite, Pyrolusite, and Satin Spar, in vesicular quartz, quartzite, kaolin, and ironstone. *Loc.* Mt. Morgan Mine, Mt. Morgan (Crocodile Cr.) Goldfield, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pubs. 17 (1884), 47 (1888), 83 (1892), 132 (1898).

6059. ——. *Assoc.with* Actinolite. *Loc.* Mt. Nelson, nr. Mt. Morgan (*ante*).

6060. ——. *Assoc.with* Copper Pyrites. *Loc.* Mohawk Co.'s Mine, Mt. Morgan (*ante*). *Ref.* O.R.

6061. ——. Bingera, 3 miles S.S.E. of Birthamba Rail. Stn. (Mt. Perry line), 15 miles (by rail and road) S.W. of Bundaberg. *Co.* Cook; *Dist.* **Wide Bay.**

6062. ——. *Assoc.with* Gold, Copper carbonate, and Hematite, in quartz. *Loc.* Rose, Shamrock, and Thistle Mine, Black Snake, 10 miles S. of Kilkivan. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

6063. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Cuprite, Redruthite, Malachite, Bismuthinite, and Limonite. *Loc.* Kabonga Mine, Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). ***Ref.*** **G.S.Q. Pub. 125,** p. 36 (1897).

6064. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Gleeson Is., 100 miles up Avo, Purari R., 228 miles N.W. of Port Moresby, **Brit. New Guinea.** *Ref.* A.R., B.N.G., p. 95 (1894).

6065. ——. *Assoc.with* Olivine (?) and Felspar, in alluvial deposits. *Loc.* Mekeo (St. Joseph), 64 miles N.N.W. of Port Moresby (*ante*).

6066. ——. *Assoc.with* Olivine and Felspar, in alluvial deposits. *Loc.* No. 4 River, vicinity of Mt. Yule, 85 miles N.N.W. of Port Moresby (*ante*).

6067. ——. *Assoc.with* Gold, in black sand. St. Joseph R., 68 miles N.N.W. of Port Moresby (*ante*). *Ref.* A.R., B.N.G., p. 96 (1894).

6068. ——. *Assoc.with* Gold, Mica, Ilmenite, Zircon, and Topaz, in alluvial deposits. *Loc.* Seventeen miles up Vanapa R., 32 miles N. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 56, p. 2 (1889).

Magoffin's (Melrose) Bores. *See under* Artesian Bores. Nos. 308, 407, 443.

Magpie Leader, Golden Gate, Croydon Goldfield. *Min.Ref.* Gold, *see* 3511.

—— Lode, Carmilla, N.N.W. of St. Lawrence. *Min.Ref.* Cerussite, *see* 1300; Galena, 3065; Gold, 4346.

Mahoney and Sullivan's Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 776.

Mahoney's Claim, Old Wolfram Camp. *Min.Ref.* Bismutite, *see* 387.

Mahrigon Sub-artesian Bores. *See under* Artesian Bores. No. 442.

Maid of Erin Mine (Tunnel Reef), Eidsvold Goldfield. *Min.Ref.* Bismite, *see* 313; Copper carbonate, 1882; Gold, 3644.

—— —— —— Reef, Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3642, 3644, 3652, 3655.

Maida Hill Sub-artesian Bores. *See under* Artesian Bores. No. 20.

Maidenhead Stn., Severn R., S.W. of Stanthorpe. *Min.Ref.* Stibnite, *see* 7637.

Mailhouse Bore. *See under* Artesian Bores. No. 403.

Main Range, Maranoa. *Min.Ref.* Calcite, *see* 522; Limonite, 5896.

—— —— (Cr. at foot of), 6 miles W. of Helidon. *Min.Ref.* Ilmenite, *see* 4907; Magnesite, 5952; Magnetite, 6031.

Main's Reef, Homestead Prov. Goldfield. *Min.Ref.* Copper carbonate, *see* 1915; Galena, 2953; Gold, 4072; Iron Pyrites, 5273; Redruthite, 7297.

Mairindi. *See* Duchess Mines, nr. Cloncurry.

Maitland (A. Gibb).

Geological Survey Publications—

(53.) On the Geological Features and Mineral Resources of the Mackay District, 1889.

(54.) Geological Observations at the heads of the Isaacs, the Suttor, and the Bowen Rivers, 1889.

(58.) Annual Progress Report of the Geological Survey for the Year 1889 (1890).

(62.) On the Proposal to Bore for Artesian Water at Normanton, 1890.

(70.) On the Geology of the Cooktown District, 1891.

(71.) On the Geology and Mineral Resources of the Upper Burdekin, 1891.

(72.) On the Coolgarra Tin Mines and Surrounding District, 1891.

(75.) On the Geology of Magnetic Island, 1892.

(77.) Annual Progress Report of the Geological Survey for the Year 1890 (1891).

(85.) Geological Observations in British New Guinea, 1891.

(87.) Annual Progress Report of the Geological Survey for the Year 1891 (1892).

(94.) Annual Progress Report of the Geological Survey for the Year 1892 (1893).

(95.) Geological Map of Charters Towers Gold Field, on a scale of 4 chains to an inch, 1892.

(98.) Annual Progress Report of the Geological Survey for the Year 1893 (1894).

(99.) On the Ulam Goldfield, 1894.

(103.) Annual Progress Report of the Geological Survey for the Year 1894 (1895).

(105.) Bulletin No. 2. Notes on the Pikedale Goldfield, 1895.

(107.) On the Proposed Boring for Coal on the Central Railway, 1895.

(108.) Annual Progress Report of the Geological Survey for the Year 1895 (1896).

(121.) On the Delimitation of the Artesian Water Area north of Hughenden, 1898.

(143.) Annual Progress Report of the Geological Survey for the Years 1896-8 (1899).

Supplementary Reports, *see* list under separate heading. Nos. 34, 35, 36, 43, 44, 59, 60.

Maiva Hills, S.E. of Cape Possession, Brit. New Guinea. *Min.Ref.* Limestone (coralline), *see* 729.

Majuba Bore. *See under* Artesian Bores. No. 334.

Malachite. *Compo.*, carbonate of copper. *Colour*, bright green. *H.* = 3·5-4. *Sp.gr.* = 3·7-4·0. *Contents* (*max.*), Copper 59 per cent.

6069. ——. *Assoc.with* Cuprite and Tetrahedrite, in ironstone and quartz. *Loc.* Argylla M.F. (3073), Argylla Cr., 40 miles W. of **Cloncurry.** *Co.* Argylla; *Dist.* **Burke.** *Assay:* Copper = 28·4 per cent.; Silver = 4 dwt.; Gold = trace per ton. *Ref.* G.S.Q. Pubs. 10, p. 7 (1885), 215, pp. 270-272 (1908), and A.R., p. 116 (1907).

6069A.——. *Assoc.with* Copper Pyrites, Chrysocolla, and Limonite, in quartz and slate. *Loc.* Cameronian M.C. (196) (Euston Group), 27 miles W.N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 267 (1908).

6069B.——. *Assoc.with* Copper Pyrites, Azurite, and Limonite, in quartz and quartzite. *Loc.* Federal R.C. (52) (Federal Group), Cameron R.. 20 miles W.N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q Pub. 215, pp. 267, 268 (1908).

6070. ——. *Assoc.with* Limonite, in gossan and slate. *Loc.* Dispute M.L. (696) (Lady Clayre Group), Dugald R., 36½ miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 282 (1908).

6071. ——. *Assoc.with* Tile Ore and Limonite, in slate, gossan, and quartz. *Loc.* Lady Clayre M.L. (279), Lady Clayre Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 279-281 (1908).

6072. ——. *Assoc.with* Copper Pyrites, Tile Ore, Azurite, and Limonite, in mica-schist, quartzite, and gossan. *Loc.* Magnet M.L. (450) (Longamundi Group), Dugald R., between 34 and 39 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 284-286 (1908).

6073. ——. *Assoc.with* Redruthite, Azurite, Ironstone, Ilmenite, Calcite, Chlorite, and Biotite, in felspar, quartz, granite, and schist. *Loc.* Mavis M.L. (315), Longamundi Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 283, 284 (1908).

6074. ——. *Assoc.with* Native Copper, Cuprite, and Limonite, in schist and gossan. *Loc.* Two Sports M.F. (2874), Longamundi Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 288, 289 (1908).

6074A.——. *Assoc.with* Copper Pyrites, Redruthite, Limonite, and Actinolite, in gossan and schist. *Loc.* Melba M.L. (319), Melba Group, Corella R., 39 miles W.S.W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 210 (1908).

6075. ——. *Assoc.with* Cuprite, Ironstone, Asbolane, and Almandine Garnet. *Loc.* Valley, W. of Mt. Eurie, 40 miles N.byW. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

6075A.——. In schist and quartzite. *Loc.* Mt. Lloyd Group of Copper Mines, Cameron R., 31 miles W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 266 (1908).

6076. ——. *Assoc.with* Redruthite and Limonite, in quartzite, schist, and gossan. *Loc.* Ruth M.L. (335), Mt. Remarkable Group, Glenroy, Leichhardt R., 51 miles W.N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 291-293 (1908).

6077. ——. *Assoc.with* Cuprite and Limonite, in gossan and kaolin. *Loc.* Una M.L. (280), Una Group, nr. Quamby, Dugald R., 33 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* A.R., p. 116 (1907), and G.S.Q. Pub. 215, pp. 277-279 (1908).

6078. ——. *Assoc.with* Cuprite. *Loc.* Broken Hill Mine, Cloncurry, 480 miles (by rail) W.byS. of Townsville. *Co.* Beaconsfield; *Dist.* Burke.

6078A.——. *Assoc.with* Cuprite, in quart. *Loc.* Cammie M.L. (477) (Eaglehawk Group), Pumpkin Gully, 12 miles E.N.E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pubs. 153, p. 7 (1900), 215, p. 238 (1908).

6079. ——. *Assoc.with* Copper Pyrites, Cuprite, and Malachite, in ironstone lode. *Loc.* Contra Lode (Gt. Australia Group), ¼-mile S.W. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

6080. ——. *Assoc.with* Native Copper, Cuprite, Tenorite, Tetrahedrite, and Iron Pyrites, in quartzite. *Loc.* Gt. Australian M.F. (A1), (Gt. Australian Group), Cloncurry Township. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pubs. 10, p. 14 (1885), and 215, pp. 242-250 (1908).

6081. Malachite. *Assoc.with* Gold, Native Copper, Cuprite, and Azurite. *Loc.* Homeward Bound M.C. (331), Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pubs. 10, p. 4 (1885), and 215, pp. 233, 234 (1908).

6082. ——. In altered slate. Lady Mary Mine, Cloncurry. *Co.* Beaconsfield (*ante*). *Assay:* Gold = 6 dwt. 18 gr. per ton; Silver = 12 dwt. per ton; Copper = 11·3 per cent. *Ref.* A.R., p. 116 (1907).

6083. ——. *Assoc.with* Redruthite, in quartz. *Loc.* Lady Mina M.L. (552), (Gt. Australian Group), 3 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 254 (1908).

6084. ——. *Assoc.with* Cuprite, Tenorite, and Azurite, in ferruginous quartzite. *Loc.* Ma Foi M.L. (508), (Gt. Australia Group), 1½ mile N.E. of Cloncurry Township. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 253 (1908).

6085. ——. *Assoc.with* Native Copper, Cuprite, and Limonite, in quartzite, schist, and gossan. *Loc.* M.F. (14), Gt. Australia Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 251, 252 (1908).

6086. ——. *Assoc.with* Cuprite, Manganese-dioxide, Asbolane, and Almandine Garnet, in lode. *Loc.* Mountain Home Copper Mine, Mt. Norma, Elder Cr., 17 miles S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 15 (1885), and 215, p. 229 (1908).

6087. ——. *Assoc.with* Cuprite, Tetrahedrite, and Chalcostibite, in hematite. *Loc.* Copper Lode, Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 10, p. 4 (1885), and P.R.S.Q., vol. 4, p. 54 (1887).

6087A.——. *Assoc.with* Redruthite, Cuprite, Tile Ore, Chrysocolla, and Limonite, in quartz and quartzite. *Loc.* Rocklands Group of Copper Mines, between Butcher and Morris Crs., 9 miles W. of Cloncurrry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 258-265 (1908).

6087B.——. *Assoc.with* Redruthite, Cuprite, Tile Ore, and Limonite, in gossan and quartz. *Loc.* Chum M.C. (329), (Serpent Hill Group), Morris Cr., 4½ to 5½ miles W.S.W. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 256 (1908).

6088 ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Victoria P.C. (Victoria Reef), Bower Bird Goldfield, 70 miles N.W. of Cloncurry. *Cos.* Brahe and Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 2 (1894).

6088A.——. *Assoc.with* Cuprite, Tile Ore, and Limonite, in lode. *Loc.* Carlton Hills Run, 78 miles N.W.byW. of Cloncurry. *Co.* Brahe; *Dist.* Burke. *Ref.* A.R., p. 269 (1910).

For further Cloncurry references *see* Nos. 6091 to 6189.

6089. ——. *Assoc.with* Copper Pyrites, Azurite, Cassiterite, Galena, and Zinc Blende, in chlorite. *Loc.* Comet Tin Mines, N. of Ten-Mile Cr., Stanhills Tinfield, 12 to 24 miles S.E. of Croydon. *Co.* Esmeralda; *Dist.* Burke. *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

6090. ——. *Assoc.with* Azurite, in lode in granite. *Loc.* Left-hand Branch of Ten-Mile Cr., Stanhills (*ante*). *Ref.* B.D.

6091. ——. *Assoc.with* Redruthite, Tile Ore, and Actinolite, in ironstone. *Loc.* Wanderer M.L. (622), (Eclipse Group), N.W. of Donaldson, 68 miles N.byW. of Cloncurry. *Co.* Granada; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 357 (1908).

6092. ——. *Assoc.with* Hematite, in slate *Loc.* Mt. Gordon M.L. (597), (Mt. Gordon Group), S. of Oxide Cr., 2 miles N.N.E. of Mt. Oxide, 111 miles N.W. of Cloncurry. *Co.* Kamileroi; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 365, 366 (1908).

6093. ——. *Assoc.with* Tile Ore and Chrysocolla, in gossan, schist, and quartz. *Loc.* Alice M.L. (717), (Alice Group), 24½ miles N.E. of Duck Cr., 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 162-164 (1908).

6094. ——. *Assoc.with* Tile Ore, in schist and quartz. *Loc.* Deadlock M.L. (542), Alice Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 164, 165 (1908).

6095. ——. *Assoc.with* Copper Pyrites, Limonite, and Calcite, in gossan and quartz. *Loc.* Iron Duke M.L., Alice Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 165, 165 (1908).

6096. ——. *Assoc.with* Copper Pyrites, Tile Ore, Redruthite, Chrysocolla, Hematite, Limonite, and Turgite, in quartz, calcite, and gossan. *Loc.* Belfast M.L. (303), Belfast Group, 10 chains S.E. of Cloncurry Road, 2 miles N.N.E. of Mt. Start, 21 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 120-122 (1908).

6097. ——. *Assoc.with* Redruthite, Azurite, and Limonite, in quartz and schist. *Loc.* Boomerang M.C. (162), (Boomerang Group), W. of Cone Cr., 2 miles N.N.W. of Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 99, 100 (1908).

6098. ——. *Assoc.with* Cuprite, Tetrahedrite, and Stibnite, in quartz. *Loc.* Rainbow M.L. (2454), Boomerang Group (*ante*). *Refs.* G.S.Q. Pub. 10, p. 5 (1885), and Pub. 215, p. 102 (1908).

6099. ——. *Assoc.with* Copper Pyrites, Cuprite, Tetrahedrite, and Antimony. *Loc.* Rainbow Copper Lode, Boomerang Group (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 56 (1887).

6100. ——. *Assoc.with* Copper Pyrites, Tile Ore, and Azurite, in gossan, quartz, and schist. *Loc.* Celestial Extd. M.C. (195) (Chinaman Group), 23½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 148, 149 (1908).

6101. ——. *Assoc.with* Limonite, in quartz, quartzite, and schist. *Loc.* Chinaman M.F (2453), Chinaman Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 144-147 (1908).

6102. ——. *Assoc.with* Tile Ore and Chrysocolla, in quartz and schist. *Loc.* Speculation M.C. (198), Chinaman Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 150-152 (1908).

6103. ——. *Assoc.with* Cuprite. *Loc.* Cloncurry Hills, about 20 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Assay:* Gold = 1 dwt. 14 gr. per ton; Copper = 39·1 per cent. *Ref.* A.R., p. 100 (1907).

6104. ——. *Assoc.with* Azurite, Chrysocolla, and Chlorite, in schist and quartz. *Loc.* Caine's King M.L. (577) (Columbiad Group), Duck Cr., 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*) . *Ref.* G.S.Q. Pub. 215, pp. 142, 143 (1908).

6105. ——. *Assoc.with* Redruthite and Tile Ore, in ferruginous quartz and quartzite. *Loc.* Columbiad M.L. (500), Columbiad Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 141, 142 (1908).

6106. ——. *Assoc.with* Redruthite, Limonite, and Göthite, with traces of Gold and Silver, in schist and quartz. *Loc.* Mountain Maid M.L. (526), Columbiad Group (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 215, pp. 140, 141 (1908).

6107. ——. *Assoc.with* Redruthite, Cuprite, Tile Ore, and Limonite, in quartz and schist. *Loc.* Butterfly M.L. (496) (Daisy Group), nr. Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 109, 110 (1908).

6108. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Limonite, Calcite, Actinolite, Chlorite, and Epidote, in quartz, chloritic schist, and calcareous sinter. *Loc.* Daisy United M.C. (155), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

6109. ——. *Assoc.with* Hematite and Limonite, in quartz and schist. *Loc.* Horseshoe M.L. (451), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 104 and 105 (1908).

6110. ——. *Assoc.with* Redruthite, in quartz and chloritic schist. *Loc.* Meteor M.C. (145), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 105, 106 (1908).

6111. ——. *Assoc.with* Limonite and Actinolite, in quartz and chloritic schist. *Loc.* Tulip No. 1 E. M.C. (180), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 106 (1908).

6112. ——. *Assoc.with* Redruthite, Tile Ore, and Limonite, in chloritic schist and quartz. *Loc.* Balfour Extd. M.C. (257) Diagonal Group), Duck Cr., nr. Mt. Start, 22½ miles S.S.W. of Cloncurry (*ante*). *Assay:* Copper = 38·6 per cent.; Gold = 20 gr., and Silver = 5 dwt. 14 gr. per ton. *Ref.* G.S.Q. Pub. 215, pp. 138, 139 (1908).

6113. ——. *Assoc.with* Redruthite and Tile Ore, in chloritic schist, gossan, and quartz. *Loc.* Diagonal M.F. (2487), Diagonal Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 135, 136 (1908).

6114. ——. *Assoc.with* Gold, Copper Pyrites, Redruthite, Tile Ore, Azurite, and Limonite, in chloritic schist. *Loc.* Pioneer M.L. (229), Diagonal Group (*ante*). *Assay:* Copper = 18·9 per cent.; Gold = 1 dwt. 4 gr., and Silver = 11 dwt. per ton. *Ref.* G.S.Q. Pub. 215, pp. 132-135 (1908).

6115. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Limonite, in schist and quartz. *Loc.* Prospector M.C. (182), Diagonal Group (*ante*). *Ref.* G.S.Q. Pub.215, pp. 136-138 (1908).

6116. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Azurite, and Chrysocolla, in gossan, quartz, and quartzite. *Loc.* Captain M.L. (Eva Group), 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 158, 159 (1908).

6117. Malachite. *Assoc.with* Copper,Pyrites, Redruthite, Tile Ore, and Chrysocolla, in quartz and calcite. *Loc.* Commonwealth M.C. (330), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 158 (1908).

6118. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Calcite, and Chlorite, in chloritic schist, gossan, and quartzite. *Loc.* Eva Extd. M.L. (283), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 155 (1908).

6119. ——. *Assoc.with* Hematite and Limonite, in quartz. *Loc.* Jessie M.L. (238), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 156, 157 (1908).

6120. ——. *Assoc.with* Redruthite and Tile Ore, in Chloritic schist. *Loc.* Phœnix M.C. (340), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 157 (1908).

6121. ——. *Assoc.with* Atacamite, Chrysocolla, Dioptase (?), and Tourmaline, in schist. *Loc.* Weka M.C. (?), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 159, 160 (1908).

6122. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Chrysocolla, Iron Pyrites, Limonite, Turgite, Ferro-Calcite, and Calcite, in quartzite, schist, and limestone. *Loc.* Florence R. Copper Mines, ½-mile W. of Hampden Rd., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 69-78 (1908).

6123. ——. *Assoc.with* Redruthite, Cuprite, and Limonite, in slate and gossan. *Loc.* Block (15), M.Ls.) 246 and 409), Hampden Group, 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 60, 61 (1908).

6124. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tenorite, Chrysocolla, Iron Pyrites, and Kaolin, in gossan, slates, and diorite. *Loc.* Hampden M.Ls. 244, 245, etc.), Hampden Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 49-60 (1908).

6125. ——. *Assoc.with* Limonite, in gossan. *Loc.* Hampden South M.L. (502), Hampden Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 63 (1908).

6126. ——. *Assoc.with* Cuprite. *Loc.* Mt. Babunga, Hampden-Cloncurry Copper Mines Co., 5 miles S.W. of Hampden Mine, 45 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* B.D.

6127. ——. *Assoc.with* Copper Pyrites, Tile Ore, Azurite, and Limonite, in schist and quartz. *Loc.* Comet M.L. (243), Hilda Group, Slaty Cr., 20 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 182 (1908).

6128. ——. *Assoc.with* Copper Pyrites, Redruthite, Limonite, Manganese-dioxide, and Calcite, in limestone, quartz, and schist. *Loc.* Hilda M.L. (242), Hilda Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 183, 184 (1908).

6129. ——. *Assoc.with* Copper Pyrites, Tile Ore, Redruthite, and Calcite, in schist and limestone. *Loc.* Mascott M.C. (319), Hilda Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 184, 185 (1908).

6130. ——. *Assoc.with* Tile Ore, Cuprite, and Limonite, in quartz. *Loc.* Adelaide M.L. (549), Just-in-Time Group, 1 mile S. of Malbon R., 30 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 85, 86 (1908).

6131. ——. *Assoc.with* Redruthite, Tile Ore, and Limonite, in ferruginous quartzite and schist. *Loc.* Just-in-Time M.L. (237), Just-in-Time Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 82, 83 (1908).

6132. ——. *Assoc.with* Copper Pyrites, Redruthite, and Limonite, in quartz and schist. *Loc.* Just-in-Time M.L. 1 E. (473), Just-in-Time Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 84 (1908).

6133. ——. *Assoc.with* Cuprite and Tetrahedrite, in ironstone. *Loc.* Malbon M.F. (2548), Just-in-Time Group (*ante*). *Ref.* A.R., p. 117 (1907).

6134. ——. *Assoc.with* Redruthite, Cuprite, Tile Ore, and Limonite, in quartzite and slate. *Loc.* Malbon M.F. (2548), Just-in-Time Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 79-81 (1908).

6134A. ——. *Assoc.with* Redruthite, Chrysocolla, and Limonite, in quartzite and schist. *Loc.* Lady Jenny M.L. (234), Lady Group, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 195 (1908).

6134B. ——. *Assoc.with* Redruthite, Tile Ore, Azurite, and Limonite, in quartz and schist. *Loc.* Morning Star M.L. (306), Lady Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 199 (1908).

6135. ——. *Assoc.with* Native Copper, Redruthite, Cuprite, Cyanochalcite (?), Limonite, Calcite, and Ferro-Calcite, in granular limestone. *Loc.* Dandy P.A. (297), (McPhail Group, Florence R., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 76, 77 (1908).

6136. ——. *Assoc.with* Copper Pyrites, Redruthite, Azurite, and Limonite. *Loc.* Erin-go-bragh Extd. M.C. (372), McPhail Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 77, 78 (1908).

6137. ——. *Assoc.with* Copper Pyrites, Redruthite, Chrysocolla, and Limonite, in gossan, quartzite, and schist. *Loc.* McPhail M.L. (474), McPhail Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 70-72 (1908).

6138. ——. *Assoc.with* Redruthite, Chrysocolla, Dioptase, Iron Pyrites, and Limonite, in gossan, turgite, and schist. *Loc.* Trump Extd. M.C. (368), McPhail Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 73-76 (1908).

6139. ——. *Assoc.with* Redruthite, Tile Ore, Azurite, and Limonite, in schist, quartzite, and slate. *Loc.* Monitor M.L. (419), ½-mile from Cloncurry R., 44 miles S. of Cloncurry, Monitor Group. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 65 (1908).

6140. ——. *Assoc.with* Copper Pyrites, Cuprite, and Azurite, in lode in porphyry. *Loc.* Mt. Devonport Copper Lease, Cloncurry R., 42 miles S.W. of Cloncurry, Monitor Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 66-68 (1908).

6140A.——. *Assoc.with* Gold, Copper (native), Copper Pyrites, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Limonite, Göthite, Turgite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 219-224 (1908).

6140B.——. *Assoc.with* Redruthite, Iron Pyrites, and Limonite, in schist. *Loc.* Pearl M.C. (106), Pearl Group, Corella R., 30 miles W.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 188 (1908).

6141. ——. *Assoc.with* Copper Pyrites, Tile Ore, Azurite, Chrysocolla, Hematite, and Limonite, in slate. *Loc.* Easter Gift M.L. (290), W. of Marabah Township, 1 mile S. of Mt. Start, 23 miles S.S.W. of Cloncurry, Pioneer Group. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 127-129 (1908).

6142. ——. *Assoc.with* Redruthite, Turgite, Siderite, with traces of Gold and Silver, in chloritic schist and quartz. *Loc.* Noontide M.L. (239), W. of Cone Cr., ½-mile N. of Duck Cr., nr. Mt. Start, Pioneer Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 129-131 (1908).

6143. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Iron Pyrites, and Limonite, in slate. *Loc.* Pioneer Chief M.L. (231), Cone Cr., ½-mile N. of Mt. Start, Pioneer Chief Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 123-125 (1908).

6144. ——. *Assoc.with* Copper Pyrites and Limonite, in schist and quartz. *Loc.* Primrose Extd. M.C. (267), W.N.W. flanks of Mt. Finish, near Mt. Start, 23 miles S.S.W. of Cloncurry, Pioneer Chief Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 126 (1908).

6145. ——. *Assoc.with* Tile Ore and Limonite, in chloritic schist. *Loc.* Coronet M.C. (241), Cone Cr., Duck Cr., 2¾ miles N. of Mt. Start, Ready Rhino Group, 23½ miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 96, 97 (1908).

6146. ——. *Assoc.with* Copper Pyrites, Redruthite, Chrysocolla, Limonite, and Turgite, in slate and quartz. *Loc.* Highland Mary M.L. (531), Duck Cr., 2¾ miles N.W.byN. of Mt. Start, Ready Rhino Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 91-93 (1908).

6147. ——. *Assoc.with* Cuprite, Redruthite, and Limonite, in schist and quartz. *Loc.* Ready Rhino M.L. (320), Cone Cr., Duck Cr., 2½ miles N.N.W. of Mt. Start, Ready Rhino Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 93-95 (1908).

6148. ——. *Assoc.with* Tile Ore and Limonite, in quartz and schist. *Loc.* White Rose M.L. (330), nr. Cone and Duck Creeks, Ready Rhino Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 97, 98 (1908).

6149. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, Chrysocolla, Iron Pyrites, and Limonite, in schist, slate, and quartzite. *Loc.* Banjo M.L. (590), Duck Cr., 3 miles N. of Duck Cr.-Corella Rd., Tambourine Group, 26 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 167, 168 (1908).

6150. ——. *Assoc.with* Copper Pyrites, Redruthite, Azurite, Iron Pyrites, Limonite, and Tourmaline, in schist, slate, and quartz. *Loc.* Tambourine R.C. (286) (*ante*). *Ref.* G.S.Q. Pub. 215, p. 167 (1908).

6151. ——. *Assoc.with* Copper Pyrites, Redruthite, Chrysocolla, Limonite, and Turgite, in schist and quartz. *Loc.* Brilliant M.L. (585), Duck Cr., 1½ mile N.W. of Mt. Start, 23 miles S.W. of Cloncurry, Tharsis Group. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 114, 115 (1908).

6152. ——. *Assoc.with* Redruthite, Tile Ore, and Iron Pyrites, in quartz and schist. *Loc.* Tharsis M.L. (240), Cone Cr., Duck Cr., 1¼ mile N. of Mt. Start, 22½ miles S.W. of Cloncurry, Tharsis Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 117-120 (1908).

6153. Malachite. *Assoc.with* Tile Ore, in schist and quartz. *Loc.* Waratah M.L. (127), Duck Cr., 1 mile N.W. of Mt. Start, 23 miles N.W. of Cloncurry, Tharsis Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 115, 116 (1908).

6154. ——. *Assoc.with* Copper Pyrites, Tile Ore, Göthite, and Limonite, in chloritic schist. *Loc.* Brilliant M.C. (159), Slaty Cr., 2 miles S. of Mt. Minde M.F., 1 mile N.W. of Gorge Hotel, Timberoo Group, 18 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 179, 180 (1908).

6155. ——. *Assoc.with* Limonite, Calcite, Ferro-Calcite, and Tourmaline, in cellular gossan and chloritic schist. *Loc.* Marguerite M.C. (151), 1 mile S. of Mt. Minde Freehold, Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 177, 178 (1908).

6156. ——. *Assoc.with* Copper Pyrites, Cuprite, and Limonite, in chloritic schist. *Loc.* Mt. Minde M.F. (2658), Friedman's Cr., br. of Slaty Cr., 3 miles N.W. of Gorge Hotel, Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 170, 171 1908).

6157. ——. *Assoc.with* Copper Pyrites, Bornite, Redruthite, Tile Ore, Iron Pyrites, Hematite, Limonite, Muscovite, and Calcite, in schist, slate, and quartz. *Loc.* Timberoo M.L. (716), Friedman's Cr., br. of Slaty Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 172-175 (1908).

6158. ——. *Assoc.with* Redruthite, Tile Ore, Azurite, and Limonite, in gossany quartz, and schist. *Loc.* Wallaroo (M.L. 392), Wee MacGregor Group, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 202-205 (1908).

6158A. ——. In schist and quartz. *Loc.* Newcastle M.L. (595), Duck Cr., 2 miles S.E.byS. of Mt. Start, 24 miles S.S.W. of Cloncurry, White Oxide Group, *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 161 (1908).

6159. ——. *Assoc.with* Tile Ore, in quartz. *Loc.* White Oxide M.C. (282) (*ante*). *Ref.* G.S.Q. Pub. 215, p. 160 (1908).

6159A. ——. *Assoc.with* Gold, Tile Ore, and Limonite, in lode. *Loc.* Soldier's Cap Diggings, 24 miles S.E.byS. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* A.R., p. 178 (1910).

6160. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Chrysocolla, and Limonite, in gossany quartz and calcareous sinter. *Loc.* Boundary M.L. (582), Bull Cr. Group, Coolullah Run, 74 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 345-347 (1908).

6160A. ——. *Assoc.with* Chrysocolla, in siliceous gossan. *Loc.* Decima M.C. (304), Bull Cr. Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 347, 348 (1908).

6161. ——. *Assoc.with* Redruthite and Limonite, in schist. *Loc.* Iguana M.C. (268), Bull Cr. Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 349, 350 (1908).

6162. ——. In quartz. *Loc.* Overlander M.L. (661), Calton Hills Group, Gunpowder Cr., 90 miles N.W.byW. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 358 (1908).

6163. ——. *Assoc.with* Copper Pyrites, Bornite, and Limonite, in limestone. *Loc.* Centipede M.L. (375), Centipede Group, Prospector's Creek, 53 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 301, 302 (1908).

6164. ——. *Assoc.with* Native Copper, Cuprite, Redruthite, Tetrahedrite, Iron Pyrites, Hematite, Magnetite, and Limonite, in schist and quartz. *Loc.* Crusader M.F. (2549), Crusader Group, Coolullah Run, E. of Coppermine Cr., 68½ miles N.W.byN. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pubs. 10, p. 8 (1885), and 215, pp. 334, 335 (1908).

6165. ——. *Assoc.with* Redruthite, in gossany quartz. *Loc.* Orphan M.L. (667), Crusader Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 336 (1908).

6166. ——. *Assoc.with* Copper Pyrites, Redruthite, and Limonite, in quartz. *Loc.* Bauhinia M.C. (347), Dobbyn Group, 3½ miles W.N.W. of Crusader Freeholds, Coolullah, 70½ miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 341, 342 (1908).

6167. ——. *Assoc.with* Limonite, in gossany quartz. *Loc.* Dobbyn M.F. (2551), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 340 (1908).

6168. ——. *Assoc.with* Ironstone, in ferruginous quartz. *Loc.* Dobbyn No. 1 N. M.L. (679), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 341 (1908).

6169. ——. *Assoc.with* Copper Pyrites, Redruthite, and Limonite, in schist. *Loc.* Dobbyn No. 1 S. M.L. (662), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 341 (1908).

6170. ——. *Assoc.with* Chrysocolla and Limonite, in quartz. *Loc.* Elsie M.C., Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 342, 343 (1908).

6171. ——. *Assoc.with* Redruthite, Tile Ore, and Limonite, in gossany quartz. *Loc.* Flaneur M.L. (655), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 344, 345 (1908).

6172. ——. *Assoc.with* Copper Pyrites, Redruthite, Limonite, Calcite, and Ferro-Calcite, in quartz. *Loc.* Glenferrie P.A. (300), nr. Old Man Cr., Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 344 (1908).

6173. ——. *Assoc.with* Cuprite, in kaolin. *Loc.* Widow M.C., W. bank of Soda Cr., Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 342 (1908).

6174. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Chrysocolla, and Limonite, in schist, slate, and gossan. *Loc.* Mighty Atom M.L. (274), Mighty Atom Group, 6-Mile Cr., Leichhardt R., 42 miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 304-306 (1908).

6175. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Limonite, in gossan and quartz. *Loc.* Mt. Bornite M.L. (376), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 309, 310 (1908).

6176. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tile Ore, and Limonite, in slate, schist, and gossan. *Loc.* Mt. Millicent M.L. (663), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 307, 308 (1908).

6177. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Limonite, in slate and kaolin. *Loc.* Mt. Millicent S.M.L. (664), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 308, 309 (1908).

6178. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Tile Ore, and Limonite, in schist, slate, and gossan. *Loc.* Mt. Cuthbert M.L. (107), Mt. Cuthbert Group, 6-Mile Cr., Leichhardt R., 19 miles S.W. of Coolullah H.S., 63 miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 315-318 (1908).

6179. ——. *Assoc.with* Tile Ore. *Loc.* Mt. Cuthbert M.L. (107), Mt. Cuthbert Group (*ante*). *Assay:* Average of samples—Copper = 42·4 per cent., Gold = 10 gr., and Silver = 14 dwt. 3 gr. per ton. *Ref.* A.R., p. 46 (1906).

6180. ——. *Assoc.with* Ironstone. *Loc.* Mt. Cuthbert S.M.L., Mt. Cuthbert Group (*ante*). *Assay:* Copper = 32·1 per cent., Gold = 13 gr., and Silver = 16 dwt. per ton. *Ref.* A.R., p. 46 (1906).

6181. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tile Ore, Chrysocolla, and Limonite, in schist, gossan, and quartz. *Loc.* Mt. Cuthbert, No. 1 N. M.L. (381), Mt. Cuthbert Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 318-321 (1908).

6182. ——. *Assoc.with* Copper Pyrites, Chrysocolla, Iron Pyrites, Limonite, Ironstone, and Magnesite, in kaolinised schist. *Loc.* Mt. Cuthbert 1 and 2 S. M.Ls. (257 and 294), Mt. Cuthbert Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 321, 322 (1908).

6183. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Tenorite, Iron Pyrites, and Limonite, in slate and gossan. *Loc.* Mt. Metallic R.C. (310), Mt. Metallic Group, Prospector Cr., trib. of Leichhardt R., 52 miles W.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 295-297 (1908).

6184. ——. *Assoc.with* Copper Pyrites, Redruthite, Calcite, and Jasper, in slate, gossan, and quartz. *Loc.* Queensland M.L. (436), Mt. Metallic Group. *Ref.* G.S.Q. Pub. 215, pp. 297-299 (1908).

6185. ——. *Assoc.with* Tile Ore and Atacamite, in schist and slate. *Loc.* Mt. Oxide M.L. (282), between Torpedo and Myally Crs., tribs. of Gunpowder Cr., 109 miles N.W. of Cloncurry, Mt. Oxide Group. *Co.* Tewinga; *Dist.* Burke. *Assay:* Copper = 38·6 per cent., Gold = 19 gr., and Silver = 1 oz. 18 dwt. per ton. *Ref.* G.S.Q. Pub. 215, pp. 362-364 (1908).

6186. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Limonite, in schist, gossan, and quartz. *Loc.* Chance P.A. (283), St. Paul's Cr. Group, Leichhardt R., Coolullah, 78 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 352-354 (1908).

6187. ——. *Assoc.with* Redruthite and Tile Ore, in chloritic schist. *Loc.* Rosette M.L. (638), St. Paul's Cr. Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 351, 352 (1908).

6188. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Limonite, in schist, gossan, and quartz. *Loc.* Isabella M.C. (360), Von Bremen's Group, St. Paul's Cr., Leichhardt R., Coolullah, 70 miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 217, pp. 325, 326 (1908).

6189. ——. *Assoc.with* Tile Ore, in quartzite. *Loc.* Warwick Castle M.L. (314) (Warwick Castle Group), head of St. Paul's Cr., Coolullah, 69 miles N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Ref.* G.S.Q. Pub. 215, p. 323 (1908).

—— **Note.**—Cloncurry References continued under District Gregory North, Nos. 6255-6275.

6190. Malachite. *Assoc.with* Native Copper and Cuprite. *Loc.* Caledonia Mine, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M.

6191. ——. *Assoc.with* Azurite. *Loc.* Lion Mine, nr. Mt. Perry (*ante*). *Ref.* G.S.M.

6192. ——. *Assoc.with* Azurite, etc., in lode. *Loc.* Mt. Perry Copper Mine, Mt. Perry (*ante*) *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

6193. ——. Mt. Webster, nr. Mt. Perry (*ante*). *Ref.* B.D.

6194. ——. *Assoc.with* Turgite. *Loc.* Floris Copper Lode, Perry Scrub, St. Agnes Cr., 15 miles S. of Gin Gin Rail. Stn. (Mt. Perry line), 34 miles (by rail and road) S.W. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. *Ref.* L.C.B.

6195. ——. *Assoc.with* Azurite and Psilomelane, in gossan. M.L. (16), Perry Scrub (*ante*) *Ref.* G.S.Q. Pub. 184, p. 13 (1903).

6196. ——. *Assoc.with* Azurite, in granite. *Loc.* Queensland Copper Claims, 2 miles S.W. of Wolca, 6 miles N. of Mt. Perry, 73 miles (by rail) S.S.W. of Bundaberg (Mt. Perry line). *Co.* Bowen; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 21, p. 11 (1885).

6196A. ——. *Assoc.with* Gold, Copper Pyrites, and Limonite, in lode. *Loc.* Nr. Wonbah Hill Mine, 2 miles from Wonbah Siding (Mt. Perry line), 60 miles (by rail and road) W.S.W. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* A.R., p. 264 (1910).

6197. ——. *Assoc.with* Azurite, Limonite, and Göthite. *Loc.* Lakeside, nr. Degilbo, 58 miles (by rail) W. of Maryborough (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* A.R., p. 134 (1908).

6198. ——. *Assoc.with* Azurite. *Loc.* 1 mile N.E. of Biggenden Mine, 4½ miles W. Biggenden Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. 3 (1890).

6199. ——. *Assoc.with* Copper Ores. *Loc.* Northern slope of Mt. Havilah, nr. Mt. Biggenden, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 173, p. 4 (1902).

6200. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Cuprite, Tenorite, Iron Pyrites, Pyrrhotite, Mispickel, Hematite, Zinc Blende, Bismuthinite, and Calcite, in quartz reef. *Loc.* Commonwealth Mine, nr. Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), and 207, pp. 14-19 (1907).

6201. ——. *Assoc.with* Copper Pyrites and Azurite, in ironstone. *Loc.* Don Jon (Unique) Mine, Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. *Co.* Cook (*ante*). *Ref.* A.R., p. 44 (1906).

6202. ——. *Assoc.with* Gold, Telluride of Gold, Native Bismuth, Bismuthinite, Molybdenite, Mispickel, Joseite, Zinc Blende, Copper Pyrites, Calcite, and Quartz. *Loc.* Mt. Shamrock Gold Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 60, p. 6 (1890), 125 (1897), and 168 (1901), and B.D.

6203. ——. *Assoc.with* Gold, in decomposed felspar porphyry. *Loc.* Barambah Cr., Ban Ban, 12 miles S.E. of Gayndah. *Co.* Mackenzie; *Dist.* Burnett. *Ref.* P.R.S.Q., vol. 4, pp. 38, 76 (1887).

6203A. ——. *Assoc.with* Serpentine. *Loc.* Sandy Cr., trib. of Barambah Cr., Ban Ban (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 70 (1887).

6204. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Azurite, in chloritic rock. *Loc.* Robina or Mt. Hawick Copper Mine, 12 miles (by road) W.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Mackenzie; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 150, p. 4 (1900).

6204A. ——. *Assoc.with* Galena, Anglesite, Cerussite, Massicot, Azurite, and Limonite, in lode. *Loc.* about 5 miles S. of Coalstoun Lakes, 16 miles S.W. of Biggenden Rail. Stn. (Gayndah line). *Co.* Mackenzie (*ante*). *Ref.* A.R., pp. 287, 288, 291 (1910).

6205. ——. *Assoc.with* Gold, Jasper, and Chrysocolla, in quartz. *Loc.* F. Achilles's Mine, Brovinia Goldfield, nr. Hawkwood, 50 miles S.W. of Gayndah Br. Rail. line. *Co.* Newcastle; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 114, p. 3 (1896), and G.S.M.

6206. ——. *Assoc.with* Gold, in quartz. *Loc.* Lady Rose Reef, Eidsvold Goldfield, 35 miles N.W. of Gayndah. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 160, p. 12 (1901).

6206A ——. *Assoc.with* Redruthite, Azurite, Ironstone, Barytes, and Calcite. *Loc.* Burnett Range, nr. Gaeta, about 23 miles N.byW. of Mt. Perry Rail. Stn. *Co.* Yarrol (*ante*). *Ref.* A.R., p. 263 (1910).

6207. ——. *Assoc.with* Azurite and Cuprite, in felspathic rock. *Loc.* Marshall Block Lease, Mt. Cannindah, 13 miles S.W.byS. of Many Peaks Rail. Stn. (Boyne Valley line), 71 miles (by rail and road) S. of Gladstone. *Co.* Yarrol (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 113, p. 7 (1896).

6208. ——. *Assoc.with* Tenorite, Cuprite, and Azurite, in dyke rock. *Loc.* Monument Block Lease, Mt. Cannindah (*ante*). *Ref.* G.S.Q. Pubs. 113, p. 8 (1896), 143, p. 4 (1899).

6209. ——. *Assoc.with* Gold, Silver, Native Copper, Cuprite, Tenorite, and Azurite, in lode. *Loc.* Mt. Cannindah Claim, Mt. Cannindah (*ante*). *Ref.* G.S.Q. Pubs. 105, pp. 6, 7 (1895), 113, p. 6 (1896), 143, p. 4 (1899).

6210. ——. *Assoc.with* Azurite. *Loc.* Mungai Lodes, 12 miles W.byN. of Mt. Perry, 79 miles (by rail and road) W.S.W. of Bundaberg. *Co.* Yarrol (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885).

6210A. ——. *Assoc.with* Copper Pyrites, Azurite, and Limonite, in quartz. *Loc.* Malpas's Claim, Pinnacle Cr., br. of Lynd R., 16 miles W. of Fossilbrook, **Walsh and Tinaroo Mineral Fields.** *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* A.R., p. 223 (1910).

6211. ——. *Assoc.with* Gold, Tetrahedrite, Cuprite, Azurite, Chalcanthite, and Ironstone, in lodes in gneiss and schist. *Loc.* Arbouin Mines, nr. Nondah Cr. and Walsh R., 18 miles W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 13-14 (1898).

6212. ——. *Assoc.with* Cuprite and Tile Ore, in lode stuff. *Loc.* The Granite, Maytown, 36 miles S. of Laura Rail. Stn. (Cooktown line), 103 miles (by rail and road) S.byW. of Cooktown. *Co.* Chelmsford; *Dist.* Cook. *Ref.* O.R.

6213. ——. In dyke rock. *Loc.* Glenroy Copper Mine, 7 miles N. of Palmerville, 47 miles S.W.byS. of Laura Rail. Stn. (Cooktown line), 114 miles (by rail and road) W.S.W. of Cooktown. *Co.* Chelmsford (*ante*).

6214. ——. *Assoc.with* Cuprite, in lode. *Loc.* 3 miles N. of Palmerville, 43 miles S.W.byS. of Laura Rail. Stn., 110 miles (by rail and road) S.W.byW. of Cooktown. *Co.* Chelmsford (*ante*).

6214A. ——. *Assoc.with* Copper Pyrites, Cuprite, and Azurite, in lode. *Loc.* Daintree Copper Mine, 38 miles S.E. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Copperfield; *Dist.* Cook. *Ref.* E.O.M.

6215. —— (botryoidal). *Assoc.with* other Copper Ores. *Loc.* Mt. Molloy Copper Mines, 17 miles S.S.W. of Mt. Douglas, 20 miles (by rail) N.N.W. of Biboohra Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Dagmar; *Dist.* Cook. *Ref.* G.S.M.

—— For further Walsh and Tinaroo references, *see* Nos. 6218-6248.

6215A. ——. *Assoc.with* Anglesite, Massicot, Cerussite, in lode. *Loc.* Popahrairie P.A., Fiery Cr., about 15 miles N.byW. of Georgetown. *Co.* Einasleigh; *Dist.* Cook. *Ref.* A.R., p. 194 (1909).

6215B. ——. *Assoc.with* Silver, Galena, Anglesite, and Cerussite, in quartz lode. *Loc.* Wright's Leader, Donnyville, 4½ miles S. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* A.R., p. 228 (1910).

6216. ——. South Australian Mine, Durham, 4 miles W. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.M.

6217. ——. *Assoc.with* Copper Pyrites, Pyrrhotite, etc. *Loc.* Einasleigh Copper Mine, 4 miles E.N.E. of Charleston Rail. Stn., 102 miles (by rail) S.S.W. of Almaden Rail. Stn. (Etheridge line). *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.M. and G.S.Q. Pub. 219, p. 19 (1909).

6217A. ——. *Assoc.with* Gold, Galena, Massicot, and Cerussite, in quartz and schist. *Loc.* Ancient Briton Mine, Georgetown, Etheridge Goldfield. *Co.* Gilbert (*ante*). *Ref.* A.R., p. 215 (1910).

6218. ——. *Assoc.with* Cassiterite and Azurite. *Loc.* Clan Ronald Mine, Eureka Cr., nr. Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 47 (1897), and P.R.S.Q., vol. 4, p. 77 (1887).

6219. ——. *Assoc.with* Cuprite, Azurite, Scheelite, and Wolfram, in defined quartz lodes, in slates, etc. *Loc.* Parada Mines, Walsh R., 1 mile N. of Parada Rail. Stn. (Chillagoe line), 65 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6220. ——. *Assoc.with* Copper Pyrites, Copper Oxide, and Cassiterite, in gossan lode in greywacke and slate. *Loc.* Crucible Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn., Chillagoe Br. line, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, pp. 21, 22 (1883).

6221. Malachite. *Assoc.with* Tile Ore, Azurite, and Iron Ochre. *Loc.* Ironclad Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 119, p. 9 (1897).

6222. ——. *Assoc.with* Azurite and Cassiterite, in serpentine. *Loc.* North Australian Tin Mine, Watsonville (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 77 (1887), and G.S.M.

6223. ——. *Assoc.with* Cuprite, Tile Ore, Azurite, and Red Ochre, in greywacke and shales. *Loc.* Shaughran Copper Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

6224. ——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, Iron Pyrites, Mispickel, Cassiterite, Stannite, Wolfram, Ironstone, Fluorspar, and Chlorite. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 26 (1883), and 119, p. 15 (1897).

6225. ——. *Assoc.with* Copper Pyrites, Tile Ore, Azurite, and Chalcanthite, in greywacke. *Loc.* Wyatt's Copper Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

6226. ——. *Assoc.with* Cuprite. *Loc.* Atherton Copper Mine, between Cathedral Range and Arbinjoe Cr., 4 miles N.W. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 8 (1891).

6227. ——. *Assoc.with* Tenorite, Cuprite, Tile Ore, Azurite, Hematite, Magnetite, and Chrysocolla. *Loc.* Boomerang Copper Mine, Marble Cr., 1 mile W. of Calcifer (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 8 (1891), and 119, p. 36 (1897), and G.S.M.

6228. ——. *Assoc.with* Tetrahedrite, Cuprite, Minium, and Hematite, in lode. *Loc.* Mollie Lease, Marble Cr. (*ante*). *Assays: See* No. 2435. *Ref.* G.S.Q. Pub. 69, p. 8 (1891).

6229. ——. *Assoc.with* Silver and Cerussite, in quartz. *Loc.* Otho Lease, 4 miles N.W. of Calcifer Rail. Stn. (Chillagoe line), 137 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay: See* No. 7467. *Ref.* G.S.Q. Pub. 133, p. 10 (1893).

6230. ——. *Assoc.with* Copper Pyrites, Bornite, Tetrahedrite, Cuprite, Tile Ore, Tenorite Atacamite, Iron Pyrites, and Hematite, in quartz-felspar lode. *Loc.* Ruddygore Mine, Arbinjoe Cr., 2 miles N.E. of Chillagoe Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 7 (1891), 119, p. 39 (1897), and 134, pp. 10, 11 (1898).

6231. ——. *Assoc.with* Cuprite. *Loc.* Emuford, Emu Cr., 11 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6232. ——. *Assoc.with* Azurite. *Loc.* 5 miles S. of Koorboora Rail. Stn. (Chillagoe line), 113 miles (by rail and road) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* (?).

6233. ——. *Assoc.with* Tetrahedrite, Cerussite, Galena, and Zinc Blende. *Loc.* Eclipse Silver Mine, Muldiva, 6 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

6234. ——. Paisley Silver Mine, Muldiva (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

6234A. ——. *Assoc.with* Native Silver and Azurite. *Loc.* Silver Mines, Muldiva (*ante*). *Ref.* B.D.

6235. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Azurite, Chrysocolla, Fluorspar, and Garnet. *Loc.* Dorothy Copper Mine, Opera Cr., 1½ mile S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 2 (1898), and P.R.S.Q., vol. 15, p. 51 (1900).

6236. ——. *Assoc.with* Cuprite, Galena, Cerussite, and Ironstone, in clay and quartz. *Loc.* Girofla Mine, Opera Cr. (*ante*). *Ref.* G.S.Q. Pub. 69, p. 3 (1891), and B.D.

6237. ——. *Assoc.with* Native Copper, Tetrahedrite, Cuprite, Azurite, Hematite, Manganese-dioxide, and Selenite, in lode. *Loc.* Griffith Copper Lease, head of Julia Cr., 2 miles S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 69, p. 5 (1891), and 134, p. 11 (1898), and G.S.M.

6238. ——. *Assoc.with* Tetrahedrite, in lode. *Loc.* Lady Jane Mine, 1 mile S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, p. 12 (1898).

6239. —— (botryoidal). Magazine Face, Mungana Rail. Stn. (Chillagoe line), 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

6240. ——. *Assoc.with* Chrysocolla and Lithomarge, in quartzite. *Loc.* McIlwraith Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 6 (1898).

6241. ——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, Galena, Cerussite, Minium, Hematite, Zinc Blende, and Garnet, in felpathic matrix and gossan. *Loc.* Penzance Mine, Redcap Cr. (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 6 (1891), 134, p. 11 (1898).

6242. ——. *Assoc.with* Tetrahedrite, Ironstone, Limonite, Siderite, and Manganese-dioxide. *Loc.* Queenslander Copper Lease, Redcap Cr. (*ante*). *Ref.* G.S.Q. Pub. 69, p. 7 (1898).

6243. ——. *Assoc.with* Copper Pyrites, Azurite, and Cerussite, in ferruginous lode. *Loc.* Queenslander Copper Lease, Redcap Cr. (*ante*). *Ref.* G.S.Q. Pub. 134, p. 11 (1898).

6244. ——. *Assoc.with* Azurite and Copper Pyrites. *Loc.* Mungana Mines, 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook.

6244A.——. *Assoc.with* Copper Pyrites, Bornite, Redruthite, Azurite, Hematite, Limonite, Cinnabar, and Jasper, in quartz and calcite. *Loc.* St. George Copper and Coal Mines, Little R., 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mosman; *Dist.* Cook. *Ref.* G.S.Q. Pub. 222, pp. 21-32 (1910).

6245. ——. *Assoc.with* Azurite. *Loc.* Fossilbrook, 28 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 19 (1898).

6246. ——. In lode. Gilberton, 24 miles S.byE. of Charleston Rail. Stn. (Etheridge line). *Co.* Victor; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 76 (1887).

6246A.——. *Assoc.with* Redruthite, Tile Ore, and Azurite, in quartz lode. *Loc.* Ortona Copper Mines, S. bank of Percy R., 13 miles N.W. of Gilberton, Etheridge Goldfield. *Co.* Victor (*ante*). *Ref.* G.S.Q. Pub. 219, pp. 17-19 (1909).

6247. ——. *Assoc.with* Cuprite, in clay slate. *Loc.* Mitchell R., 20 miles from O.K. Copper Mine, 60 miles N.N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Wrotham; *Dist.* Cook. *Ref.* O.R.

6248. ——. *Assoc.with* Tetrahedrite, Cuprite, Azurite, Cerussite, and Ironstone, in lodes. *Loc.* Tartana Hill, Ashtonville, 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 15, 16 (1898).

—— For further Walsh and Tinaroo references, *see* 6276-6285.

6249. ——. *Assoc.with* Silver, Copper Pyrites, and Mispickel, in quartz lode. *Loc.* Min. Area (26), Jibbinbar, 20½ miles S.byW. of **Stanthorpe.** *Co.* Bentinck; *Dist.* **Darling Downs.** *Assay:* Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 87, p. 10 (1892).

6250. ——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, and Zinc Blende, in quartz. *Loc.* Sel. (24), nr. Sundown Cr., Severn R., 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

6251. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Galena. *Loc.* Silver Queen Mine, Severn R., 6 miles W. of Ballandean Rail. Stn., 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assays: See* No. 2834. *Ref.* G.S.M.

6252. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Cuprite, Tile Ore, Azurite, Pyrargyrite, Galena, Cerussite, Zinc Blende, Smithsonite, Ironstone, and Calcite, in lode. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pubs. 120 (1898), 191 (1904).

6253. ——. *Assoc.with* Copper Pyrites. *Loc.* Texas Copper Mine, 2 miles N.W. of Silver Spur Mine, 45 miles W.S.W. of Stanthorpe Rail. Stn. *Co.* Clive (*ante*). *Ref.* G.S.Q. Pub. 120, p. 95 (1898).

6254. ——. *Assoc.with* Galena. *Loc.* 3 miles N.W. of Silver Spur Mine, 46 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* A.R., p. 126 (1907).

6255. ——. *Assoc.with* Redruthite, Tile Ore, Tenorite, Iron Pyrites, and Limonite, in kaolinised slate and gossan. *Loc.* Labour Victory R.C. (29), S. of Agate Downs Goldfield, 53 miles S. of **Cloncurry.** *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 12-14 (1908).

6255A.——. *Assoc.with* Copper Pyrites, Bornite, and Tetrahedrite. *Loc.* Duchess M.L. (275), Jack's Cr., Burke R., 61 miles S.W. of Cloncurry *Co.* Chatsworth (*ante*). *Ref.* G.S.M.

6256. Malachite. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Limonite, Calcite, and Epsomite, in schist and quartz. *Loc.* Duchess M.L. (275) (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 18-22 (1908).

6257. ——. *Assoc.with* Cuprite, in quartz. *Loc.* Duchess M.L. (275) (*ante*). *Assay:* Copper = 31·2 per cent.; Silver = 1 oz. 2 dwt. per ton. *Ref.* A.R., p. 116 (1907).

6258. ——. *Assoc.with* Cuprite, Azurite, and Limonite, in quartz. *Loc.* Ivanhoe M.L. (277), Burke R., 61 miles S.W. of Cloncurry, Duchess Group. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 23, 24 (1908).

6259. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Tile Ore, and Limonite, in kaolinised rock, schist, and quartz. *Loc.* Italian M.L. (689), Lady Fanny Group, Wills R., 60 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, p. 34 (1908).

6260. ——. *Assoc.with* Copper Pyrites and Tile Ore, in slate, porphyry, and gossan. *Loc.* Lady Fanny M.L. (178), Lady Fanny Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 30-33 (1908).

6261. ——. *Assoc.with* Tile Ore and Limonite, in porphyry, quartzite, and quartz. *Loc.* Prodigal M.L. (490), Lady Fanny Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 36 (1908).

6262. ——. *Assoc.with* Cuprite and Azurite. *Loc.* Monastery M.L. (467), 5 miles W. of Mt. Birnie, 79 miles S.W. of Cloncurry, Mt. Birnie Group. *Co.* Chatsworth; *Dist.* Gregory North. *Assay:* Copper = 25.7 per cent.; Silver = 9 dwt. per ton. *Ref.* A.R., p. 117 (1907).

6263. ——. *Assoc.with* Redruthite. *Loc.* Monastery M.L. (467) (*ante*). *Ref.* G.S.Q. Pub. 215, p. 28 (1908).

6264. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Iron Pyrites, Limonite, and Chrysocolla, in hornblendic schist. *Loc.* Mt. Birnie M.L. (686, etc.), Burke R., 74 miles S.S.W. of Cloncurry, Mt. Birnie Group. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, p. 367 (1908).

6265. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Chrysocolla, and Covelline, in quartz, quartzite, and schist. *Loc.* Ardath Lease (656), 4 miles S.E. of Mt. Hope Group, Wills R., 51 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 47, 48 (1908).

—— For other Cloncurry References, *see under* District Burke, Nos. 6069-6189.

6266. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Atacamite, Limonite, and Calcite, in quartz and chloritic schist. Blue Jacket M.L. (632), 3 miles E. of Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 43, 44 (1908).

6267. ——. *Assoc.with* Copper Pyrites, Redruthite, and Limonite, in gossan, quartz, and slate. Little Beauty M.L. (568), 2½ miles E.N.E. Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 44-47 (1908).

6268. ——. *Assoc.with* Copper Pyrites, Redruthite, Covelline (?), Tile Ore, Iron Pyrites, Limonite, and Calcite, in chloritic schist. Monarch Senior M.C. (352), 3 miles E. of Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 42, 43 (1908).

6269. ——. *Assoc.with* Cuprite and Limonite, in quartz and quartzite *Loc.* Mt. Hope M.L. (366), Green's Cr., trib. of Burke R., 53½ miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 38, 39 (1908).

6270. ——. *Assoc.with* Azurite and Ironstone. *Loc.* Trikelana M.L. (522), Pilgrim's Cr., Burke R., 68 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* A.R., p. 116 (1907).

6271. ——. *Assoc.with* Copper Pyrites, Redruthite, Chrysocolla, and Limonite, in quartz and kaolin. *Loc.* Trikelana M.L. (522) (*ante*). *Ref.* G.S.Q. Pub. 215, p. 26 (1908).

6272. ——. *Assoc.with* Cuprite and Azurite, in schist, quartz, and kaolin. *Loc.* Horse Cr. M.L. (220, etc.), 50 miles S.S.W. of Cloncurry, Horse Cr. Group. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, pp. 15, 16 (1908).

6273. ——. *Assoc.with* Gold, Cuprite, Tile Ore, Tenorite, Atacamite, Chalcanthite, Iron Pyrites, Limonite, Calcite, and Chalcedony, in kaolinised slate and gossan. *Loc.* Mt. Elliott Copper R.C., M.L. (3, etc.) (Mt. Elliott Group), Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 3-12 (1908).

6274. ——. *Assoc.with* Cuprite and Tenorite, in quartz. *Loc* Mt. Elliott Copper Mine (*ante*). *Ref.* A.R., p. 118 (1907).

6275. ——. *Assoc.with* Tile Ore. *Loc.* Mt. Merlin Stn., 84 miles S.byW. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.M.

6276. ——. Bismarck Mine, Coolgarra, 12 miles (by road) N.E.byN. of Mt. Garnet Rail. Stn. (Chillagoe line), **Walsh and Tinaroo Mineral Fields.** *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.M.

6277. ——. *Assoc.with* Silver, Minium, Anglesite, and Galena, in quartz. *Loc.* Koh-i-Noor Mine, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

6278. ——. *Assoc.with* Cuprite and Azurite, in quartz. *Loc.* Round Mountain, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

6279. ——. *Assoc.with* Cassiterite, Wolfram, Iron Pyrites, Göthite, Hematite, Limonite, Mispickel, Penninite, Azurite, Chlorite, Topaz, Websterite, and Fluorspar, in quartz. *Loc.* Tin Mines, Coolgarra (*ante*).

6280. ——. *Assoc.with* Galena, in gossan. *Loc.* McFadden's or Paddy's Lode, Dry R. Tin Mines, Wild R., 12 miles S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

6281. ——. *Assoc.with* Tile Ore and Azurite, in lode. *Loc.* P.C., Dry R. Tin Mines (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

6282. ——. *Assoc.with* Azurite and Cassiterite. *Loc.* Gt. Northern P.C., Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 77 (1887).

6283. ——. *Assoc.with* Cassiterite and Talc, in quartz. *Loc.* Orient Tin Claim, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 13 (1883).

6284. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Bornite, Cuprite, Tenorite, Malachite, Chalcanthite, Iron Pyrites, Mispickel, Hematite, Magnetite, Zinc Blende, Cerussite, and Minium, in quartz lodes in quartzite and porphyry. *Loc.* Mt. Garnet Mine, Return Cr., 136 miles (by rail) S.W. of Cairns. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pubs. 72, p. 15 (1891), 134, p. 16 (1898).

6285. ——. *Assoc.with* Tetrahedrite, Azurite, Galena, Mimetite, Hematite, and Limonite, in lode. *Loc.* Mt. Garnet, Return Cr. (*ante*). *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

For other Walsh and Tinaroo References, *see under* Cook District, Nos. 6210, &c.

6286. ——. *Assoc.with* Iron Pyrites, Magnetite, Ironstone, Graphite, Garnet, and Calcite. *Loc.* Double-Barrel Cr., 27 miles (by rail) S. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* L.B. 2, p. 729 (1892).

6287. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and Garnet, in calcite. *Loc.* Hein's Lode, Limestone Range, W. of Double-Barrel Cr. (*ante*). *Ref.* G.S.Q. Pub. 77, p. 7 (1891).

6288. ——. *Assoc.with* Gold, Copper Pyrites, Tenorite, Iron Pyrites, Mispickel, and Zinc Blende. *Loc.* Buck Reef, ½-mile S.S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 76 (1887).

6288A. ——. *Assoc.with* Azurite, in quartz. *Loc.* Federal M.L. (60), Soda Water Cr., Ravenswood Goldfield (*ante*). *Ref.* A.R., p. 213 (1910).

6288B. ——. *Assoc.with* Cuprite, in quartz. *Loc.* Hayden Show, Wyandotte, 48 miles S.E. of Mt. Surprise Rail. Stn. (Etheridge line). *Co.* Gunawarra; *Dist.* Kennedy North. *Ref.* A.R., p. 178 (1909).

6288C. ——. *Assoc.with* Galena, in quartz. *Loc.* Old Harry Show, Wyandotte (*ante*). *Ref.* A.R., p. 178 (1909).

6288D. ——. *Assoc.with* Tile Ore, in quartz lode. *Loc.* Valley of Lagoons Run, 6 miles E. of Wyandotte Tel. Stn., about 64 miles S.E.byE. of Mt. Surprise Rail. Stn. (Etheridge line). *Co.* Gunawarra; *Dist.* Kennedy North. *Ref.* A.R., p. 176 (1909).

6289. ——. *Assoc.with* Gold, Cuprite, and Hematite. *Loc.* Copper King Mine, Happy Valley, 41½ miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* A.R., p. 62 (1906).

6290. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, and Azurite, in quartz reef. *Loc.* Venture Reef, Marengo Goldfield, 24 miles S.S.W. of Bowen. *Co.* Herbert (*ante*). *Assay: See* No. 7490. *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

6291. ——. *Assoc.with* Cuprite and Hematite. *Loc.* Mt. Cavanagh, Mare's Nest Cr., Normanby Road, 44 miles S.S.E. of Bowen. *Co.* Herbert (*ante*). *Assays: See* No. 2459. *Ref.* A.R., p. 60 (1906).

6291A. Malachite. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, and Limonite. *Loc.* Mare's Nest Cr., Andromache R., 44 miles S.S.E. of Bowen. *Co.* Herbert (*ante*). *Ref.* A.R., p. 271 (1910).

6292. ——. *Assoc.with* Gold and Copper Pyrites, in quartz. *Loc.* Overland Reef, between Dreghorn and Burdekin R., 14 miles S. of Ravenswood. *Co.* Murray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

6293. ——. *Assoc.with* Gold, Copper Pyrites, Azurite, and Chalcanthite, in quartz reef in granite. *Loc.* Continong Mine, Burdekin R., 70 miles W. of Townsville. *Co.* O'Connell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 35, p. 12 (1887), and G.S.M.

6294. ——. *Assoc.with* Tile Ore and Malachite, in quartz. *Loc.* Stockyard Cr. Silver Mine (Coane's Shaft), Stockyard Cr., trib. of Basalt R., Hillgrove Run, 70 miles N.N.W. of Charters Towers. *Co.* O'Connell (*ante*). *Ref.* G.S.Q. Pub. 94, p. 13 (1893).

6295. ——. Bowen R., 50 miles S.W. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 3, p. 2 (1879).

6296. ——. Pelican Cr., br. of Bowen R. (*ante*). *Ref.* G.S.Q. Pub. 3, p. 2 (1879).

6297. ——. In outcrop of quartz reef, between Wangaratta Stn. and Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Assay:* Copper = 8 per cent.

6298 ——. *Assoc.with* Copper Pyrites and Cerussite. *Loc.* Alice Shaft, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M.

6299. ——. *Assoc.with* Galena, Cerussite, Azurite, and Manganese-dioxide. *Loc.* Bonnybrook Lease (178), Running R., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), 82, p 4 (1892).

6300. ——. *Assoc.with* Native Silver, Galena, Cerussite, Chrysocolla, Mispickel, Zinc Blende, Hematite, and Manganese-dioxide, in kaolin lode. *Loc.* Hidden Treasure Lease (165), nr. Donnybrook, Running R., Kangaroo Hills Mineral Field (*ante*). *Assays: See* No. 1241. *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), 82, p. 7 (1892), and G.S.M.

6301. ——. *Assoc.with* Azurite, Cassiterite, Iron Pyrites, Hematite, and Limonite, in quartz and chlorite. *Loc.* M.L. (40 acres), in gully, trib. of Douglas Cr., Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

6302. ——. Ingola (Long Lode), Tunnel Lease (177), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.M.

6303. ——. *Assoc.with* Azurite, Hematite, and Limonite, in lode. *Loc.* Iron Mt., N. of Donnybrook, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 10, p. 71 (1891).

6304. ——. *Assoc.with* Cuprite, Azurite, and Limonite. *Loc.* Kallanda, Kangaroo Hills Mineral Field (*ante*). *Ref.* A.R., p. 106 (1907).

6305. ——. *Assoc.with* Galena, Cerussite, Chrysocolla, Manganese-dioxide, Lievrite, and Garnet. *Loc.* Mt. Hishon Lease (210), Kangaroo Hills Mineral Field (*ante*). *Assay: See* No. 2969. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

6306. ——. *Assoc.with* Bornite. *Loc.* Newton's Shaft, Day Dawn Lease (170), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.M.

6307. ——. *Assoc.with* Cerussite. *Loc.* Pinnacle Mine, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.M.

6308. ——. *Assoc.with* Azurite, in No. 3 Shaft, northern lode. *Loc.* True Blue Lease (161), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

6309. ——. *Assoc.with* Azurite, in quartz. *Loc.* Victory Extd. Lease (188), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

6310. ——. *Assoc.with* Azurite. *Loc.* Waverley Tin Mines, Kangaroo Hills Mineral Field (*ante*).

6311. ——. *Assoc.with* Copper Pyrites, Galena, Cerussite, Minium, Mispickel, Manganese-dioxide, Ironstone, and Iron Ochre. *Loc.* Colorado Silver Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* (and *Assays*) G.S.Q. Pub. 26, p. 7 (1886).

6312. ——. *Assoc.with* Gold and Tenorite, in quartz. *Loc.* Excelsior Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.M.

6313. —— (and Anglesite). *Assoc.with* Hematite. *Loc.* Lady Annie Mine, Star R. (Argentine) Mineral Field (*ante*). *Assays:* (1) Lead = 69 per cent.; Silver = 186 oz. per ton. (2) Lead = 59 per cent.; Silver = 166 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

6314. ——. *Assoc.with* Minium and Cerussite, in lode. *Loc.* Royal Standard Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

6315. ——. *Assoc.with* Native Copper and Chrysocolla. *Loc.* E. side of Townsville Road, nr. Dalrymple, 21 miles N.W.byN. of Charters Towers. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 68 (1887).

6316. ——. *Assoc.with* Native Copper, Azurite, and Chrysocolla. *Loc.* Keelbottom Copper Mine, Star R., br. of Burdekin R., 2 miles N.N.E. of Dalrymple, 21 miles N.W.byN. of Charters Towers. *Co.* Wilkie Gray (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 43 (1887), and G.S.M.

6317. ——. *Assoc.with* Cuprite and Azurite. *Loc.* Kennedy Copper Mine, Sandy Cr., br. of Burdekin R., 50 miles W. of Townsville. *Co.* Wilkie Gray (*ante*). *Ref.* O.R.

6317A.——. *Assoc.with* Gold and Limonite, in quartz. *Loc.* Highland Chief Reef, Bee Cr. Diggings, Eungella Goldfield, 10 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 229, p. 30 (1910).

6318. ——. *Assoc.with* Gold, Iron Pyrites, Limonite, Siderite, Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Highland Mary P.C., Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pub. 54, p. 2 (1889).

6319. ——. *Assoc.with* Iron Pyrites, Malachite, and Galena, in quartz. *Loc.* Duffy's Mine, Blue Mts., 9 miles S.byE. of Eton Rail. Stn., 32 miles (by rail and road) S.byW. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South (*ante*). *Ref.* G.S.Q. Pub. 53, p. 10 (1889).

6320. ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Mackay's Claim, Blue Mts. (*ante*). *Ref.* G.S.Q. Pub. 53, p. 10 (1889).

6321. ——. *Assoc.with* Azurite and Calcite. *Loc.* Emu Plains Silver Field, Bowen R., 50 miles S. of Bowen. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 54, p. 5 (1889).

6322. ——. *Assoc.with* Gold, Copper Pyrites, and Tile Ore, in lode. *Loc.* Shaft nr. Old Orchid, No. 1 N. Claim, Eungella Goldfield, 48 miles W.S.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* A.R., p. 155 (1908).

6323. ——. *Assoc.with* Gold, in quartz. *Loc.* P.A., Finch Hatton, 38 miles (by rail) W.S.W. of Mackay. *Co.* Carlisle (*ante*). *Assay:* Gold = 1 dwt. per ton; Silver = 39 oz. per ton; Copper = 8·2 per cent. *Ref.* A.R., p. 101 (1907).

6324. ——. *Assoc.with* Copper Pyrites, Azurite, Galena, Cerussite, Iron Pyrites, Mispickel, and Zinc Blende, in quartz lode. *Loc.* Mt. Barker Silver Mine, 3 miles N.W. of Eungella Stn., 33 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 3 (1889), 181, pp. 12-17 (1903), and 229, pp. 34, 35 (1910).

6325. ——. *Assoc.with* Gold, Iron Pyrites, Ironstone, and Chlorite, in quartz reef. *Loc.* Head of Spring Cr., Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 5, p. 7 (1879).

6325A.——. *Assoc.with* Azurite, in quartz and gossan. *Loc.* John Downie Copper Lode, Por. 83v, Mia Mia, Cattle Cr., 5 miles W. of Finch Hatton (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 229, pp. 36, 37 (1910).

6325B.——. *Assoc.with* Copper Pyrites and Azurite, in quartz. *Loc.* Mountain Bull Lode, Por. 7v, Mia Mia, Cattle Cr. (*ante*). *Ref.* G.S.Q. Pub. 229, p. 36 (1910).

6325C.——. *Assoc.with* Bornite. *Loc.* Silver King Lode, between Pors. 99v and 83v, Mia Mia, Cattle Cr. (*ante*). *Ref.* G.S.Q. Pub. 229, pp. 36, 37 (1910).

6326. ——. *Assoc.with* Azurite and Earthy Hematite, in quartz. *Loc.* O'Brien's Mine, 2 miles W. of Pine Vale Mine, Pine Vale Cr., Pioneer R., 11 miles S.byE. of Eton Rail. Stn., 34 miles (by rail and road) S.W.byS. of Mackay, Mt. Spencer Gold and Mineral Field. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), and 229, pp. 12-17 (1910).

6326A.——. *Assoc.with* Silver, Azurite, and Limonite, in lode. *Loc.* Nr. Finch Hatton Rail. Stn. (Mackay line), 38 miles W.S.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* A.R., p. 280 (1910).

6327. ——. *Assoc.with* Gold, Copper Pyrites, Tenorite, Tetrahedrite, Azurite, Galena, and Ironstone, in quartz. *Loc.* Pine Vale Copper Mine, Pine Vale Cr. (*ante*). *Ref.* G.S.Q. Pub. 53, p. 10 (1889).

6328. ——. Biralee Stn., Bowen R., 60 miles S.W. of Bowen. *Co.* Drake; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 3, p. 2 (1879).

6329. Malachite. *Assoc.with* Gold, Copper Pyrites, Cuprite, Azurite, Galena, Bismuth (native), Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Hematite, and Ironstone, in lode. *Loc.* Daisy Bismuth Mine, Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Analysis: See* No. 350. *Ref.* G.S.Q. Pub. 57, p. 7 (1889), and G.S.M.

6330. ——. *Assoc.with* Azurite and Limonite. *Loc.* Lady Jane Mine, Eukalunda (*ante*). *Ref.* O.R.

6331. ——. *Assoc.with* Cuprite. *Loc.* Lady Mary Mine, Eukalunda (*ante*). *Ref.* O.R.

6331A. ——. *Assoc.with* Azurite, in gossan. *Loc.* Nr. Burdekin Falls, about 83 miles S.W.byW. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* O.R. (1910).

6332. ——. *Assoc.with* Copper Pyrites and Azurite, in lode, in granite country. *Loc.* Lady Mary Mine, Mt. Wyatt Goldfield, 60 miles S.S.E. of Ravenswood Rail. Stn. *Co.* Sellheim (*ante*). *Assays: See* No. 2265. *Ref.* A.R., p. 74 (1906).

6333. ——. *Assoc.with* Cuprite and Azurite. *Loc.* Peak Downs Copper Mine, Copperfield, 4 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* P.R.S.Q., vol. 4, p. 77 (1887).

6334. ——. *Assoc.with* Azurite and Ironstone, in pipe vein. *Loc.* Freedom of Contract 1 Mine, Ruby Cr., 6½ miles N.E.byN. of Withersfield Rail. Stn. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 81, p. 4 (1892).

6335. ——. *Assoc.with* Bornite and Limonite, in lode. *Loc.* Freedom of Contract 2 Mine (*ante*). *Assay:* Copper = 17 per cent.; Silver = 4 oz. per ton. *Ref.* G.S.Q. Pub. 81, p. 4 (1892).

6336. ——. In small irregular patches at contact of diorite and slate. *Loc.* Rannes Stn., 34 miles S. of Westwood Rail. Stn. (Central line), 65 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Ferguson; *Dist.* Leichhardt. *Ref.* B.D.

6337. ——. *Assoc.with* Ferro-Calcite and Epidote. *Loc.* Collaroy Stn., 25 miles N.W. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.M.

6338. ——. *Assoc.with* Gold, Silver, and Mispickel, in quartz. *Loc.* Ironbark Mine, Miners' Cr., Collaroy (*ante*). *Assay: See* 4181. *Ref.* G.S.Q. Pub. 141, p. 4 (1898).

6339. ——. *Assoc.with* Copper (native) and Azurite, in epidote rock. *Loc.* On hill, W. br. of Murray Cr., Collaroy (*ante*). *Assay:* Copper = 2·4 per cent. *Ref.* G.S.Q. Pub. 141, p. 4 (1898).

6339A. ——. *Assoc.with* Azurite, in slate. *Loc.* Absolon's M.F. 2417, Royal Prince M.C. (54), Sunbeam M.L. (30), and Wallaroo M.F (634), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, pp. 19, 20, 43, 45 (1910).

6339A(1). ——. *Assoc.with* Azurite, Copper Pyrites, and Hematite, in quartz. *Loc.* Ballyhooley Claim, 5 miles from Mt. Flora Freehold, Mt. Flora Gold and Mineral Field (*ante*). *Assay: See* 2269H. *Ref.* A.R., p. 243 (1910).

6339B. ——. In granite and slate. Banner of Freedom M.L. (33), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, p. 20 (1910).

6339C. ——. *Assoc.with* Chrysocolla and Hematite, in granite. *Loc.* Brown's M.F. (1807), Native Youth P.P.A. (129), and Paddock Workings, Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 21, 39 (1910).

6339D. ——. *Assoc.with* Tile Ore. *Loc.* Clooracorn P.P.A. 147, Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 21, 39 (1910).

6339E. ——. *Assoc.with* Azurite, in granite. *Loc.* Comet P.P.A. (135) and Robertson Front Sel., M.F. (1828), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 22, 41 (1910).

6339F. ——. *Assoc.with* Redruthite, in granite. *Loc.* Dalrymple M.F. (1865), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, p. 22 (1910).

6339G. ——. *Assoc.with* Azurite, Limonite, and Jasper, in gossan in granite and slate. *Loc.* Eastern Sel. M.F. (2755), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 288, p. 23 (1910).

6339H. ——. *Assoc.with* Azurite, Hematite, and Manganese-dioxide, in granite. *Loc.* Emperor P.P.A. (320), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, p. 25 (1910).

6339I. ——. *Assoc.with* Azurite, Hematite, and Mispickel, in slate. *Loc.* Fitzgerald's M.F. (1408), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, p. 26 (1910).

6339J. ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, Iron Pyrites, and Ironstone, in slate. *Loc.* Isen's M.F. (2642), Mt. Flora Gold and Mineral Field (*ante*). *Assay: See* No. 2269B. *Ref.* G.S.Q. Pub. 228, pp. 27-29 (1910).

6339k.——. *Assoc.with* Copper Pyrites, Azurite, Iron Pyrites, and Hematite, in granite. *Loc.* Iron Duke M.C. (42) and Painted Peak M.F. (1807), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 27, 39 (1910).

6339l.——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Azurite, in gossan in slate. *Loc.* Keeley's M.F. (2382), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 29, 30 (1910).

6339m.——. *Assoc.with* Copper Pyrites, Iron Pyrites, Azurite, and Hematite, in gossan in slate. *Loc.* Laird of the Hills M.L. (32), Mt. Flora Gold and Mineral Field (*ante*) *Ref.* G.S.Q. Pub. 228, pp. 30, 31 (1910).

6339n.——. *Assoc.with* Copper Pyrites, Tile Ore, Azurite, Iron Pyrites, Chlorite, and Calcite, in slate and granite. *Loc.* MacFadzen's M.F. (1749) (Douchang, Flora, Essie, Dozzler, Green Outcrops Lodes), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 31-35 (1910).

6339o.——. *Assoc.with* Azurite and Chrysocolla, in gossan in granite. *Loc.* Marjorie M.L. (31), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 35, 36 (1910).

6339p.——. *Assoc.with* Redruthite, Azurite, Iron Pyrites, Hematite, and Limonite, in granite. *Loc.* Monarch P.P.A. (116, etc.), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 36-38 (1910).

6339q.——. *Assoc.with* Copper Pyrites, Azurite, Iron Pyrites, Pyrrhotite, Hematite, Limonite, and Magnetite, in granite and slate. *Loc.* Rodger's Back Sel. M.F. (1430), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 41, 42 (1910).

6339r.——. *Assoc.with* Mispickel and Hematite, in gossan in granite. *Loc.* True Blue M.L. (29), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 43, 44 (1910).

6339s.——. *Assoc.with* Copper Pyrites, Tenorite, Azurite, and Hematite. *Loc.* Mt. Orange Copper Mines, 75 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* P.R.S.Q., vol. 4, pp. 52, 77 (1887).

6340. ——. *Assoc.with* Tetrahedrite, in lode, and in tuffaceous shales. *Loc.* Balcomba Range, 24 miles N. of Duaringa, 90 miles (by rail and road) W. of Rockhampton (Central line). *Co.* Leura; *Dist.* Leichhardt. *Ref.* B.D.

6341. ——. *Assoc.with* Azurite and Ironstone, in pipe of ore. *Loc.* Ruby Cr., 8 miles N.N.W. of Anakie Rail. Stn., 201 miles (by rail) W. of Rockhampton. *Co.* Plantagenet; *Dist.* Leichhardt. *Ref.* B.D.

6342. ——. *Assoc.with* Azurite, in altered slate. *Loc.* Bonser P.P.A. (133), in gully N. of Boothill Cr., 3¼ miles W. of Tierawoomba Homestead, about 50 miles S.S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, p. 50 (1910).

6343. ——. *Assoc.with* Gold and Ironstone, in quartzite. *Loc.* Blackbutt, 14 miles W.byS. of Benarkin Rail. Stn. (Brisbane-Valley line), 125 miles (by rail and road) W.N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* O.R.

6344. ——. *Assoc.with* Azurite, in altered sedimentary rocks. *Loc.* Gt. Pyramid Copper and Silver Mine, Cressbrook Cr., 2 miles S.W. of Rising Star, about 14 miles N. of Esk Rail. Stn. (Brisbane-Valley line), 81 miles (by rail and road) W.N.W. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 169, p. 6 (1901).

6345. ——. *Assoc.with* Cuprite and Azurite, in quartz lode. *Loc.* 7-Mile Diggings, 7 miles S.E. of Nanango, about 15 miles N.W.byW. of Benarkin Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 29, p. 2 (1886).

6346. ——. *Assoc.with* Gold, Ironstone, and Copper Oxide, in quartz. *Loc.* Black Diamond Mine, nr. Taromeo, 6 miles W.N.W. of Benarkin Rail. Stn. (Brisbane-Valley line), 117 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish (*ante*). *Assay: See* No. 4203. *Ref.* G.S.Q. Pub. 159, p. 25 (1901).

6347. ——. *Assoc.with* Native Copper and Native Silver, in lode. *Loc.* Red Queen Mine, nr. Taromeo (*ante*). *Ref.* G.S.Q. Pub. 159, p. 25 (1901).

6348. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Azurite, and Malachite. *Loc.* Par. of Dixon (Por. 140), 13 miles E. of Esk Rail. Stn., 70 miles (by rail and road) N.W.byN. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Assay: See* No. 2280. *Ref.* A.R., pp. 156, 157 (1908).

6349. Malachite. *Assoc.with* Bismuthinite, Bismutite, and Minium, with traces of Gold, in quartz. *Loc.* Mt. Samford, Enoggera Ranges, 6½ miles W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 159, p. 18 (1890).

6350. ——. *Assoc.with* Azurite and Copper Pyrites, in garnet rock. *Loc.* P. Area, Diglum Cr., Barmundoo, 21 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 162, p. 9 (1901).

6351. ——. *Assoc.with* Gold, Silver, Azurite, and Mispickel, in quartz, ironstone, and clay. *Loc.* P. Area (56), Diglum Cr., Barmundoo (*ante*). *Ref.* G.S.Q. Pub. 162, p. 9 (1901).

6352. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Tile Ore, Azurite, Iron Pyrites, Hematite, Magnetite, Limonite, and Calcite. *Loc.* Many Peaks Copper Mine, 58 miles (by rail) S. of Gladstone (Boyne Valley line). *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 150, p. 8 (1900), 194, p. 28 (1904).

6353. ——. *Loc.* Blue Bag Shaft, Glassford Cr. Copper Mine, 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne-Valley line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.M.

6354. ——. *Assoc.with* Bornite, Copper Pyrites, Cuprite, Tenorite, Azurite, Galena, Zinc Blende, Hematite, Magnetite, Garnet, Chlorite, and Calcite. *Loc.* Copper Mines, Glassford Cr. (*ante*). *Ref.* G.S.Q. Pubs. 150, p. 5 (1900), and 194, p. 28 (1904).

6355. ——. *Assoc.with* Azurite, in dyke. *Loc.* Maxwelton Goldfield, 35 miles S.W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Assay: See* No. 244. *Ref.* A.R., p. 111 (1907).

6356. ——. *Assoc.with* Actinolite. *Loc.* Mt. Alma Stn., Calliope R., 30 miles S.W.by W. of Gladstone. *Co.* Clinton (*ante*).

6356A. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, and Ironstone, in crystalline limestone. *Loc.* Mt. Hector Mine, E. side of Dawes Range, 60 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* Q.G.M.J., vol. 4, pp. 174-177 (1903).

6357. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Zinc Blende, and Galena, in quartz. *Loc.* Brigham Young (Tadman's Tapautohaunga), Norton Goldfield, 33 miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 208, pp. 15, 16 (1907).

6358. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Redruthite, Azurite, Iron Pyrites, Mispickel, Scorodite, and Zinc Blende, in quartz. *Loc.* Chandler's Reefs, Norton Goldfield (*ante*). *Assay: See* No. 4269. *Ref.* G.S.Q. Pub. 208, p. 18 (1907).

6358A. ——. *Assoc.with* Bornite, Azurite, and Limonite, in quartz lode. *Loc.* 4 miles from Mt. Bennett, about 30 miles W.S.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* A.R., p. 218 (1910).

6359. ——. *Assoc.with* Cuprite and Azurite, in quartz lode. *Loc.* 2 miles W. of Old Diggings, nr. Raglan Goldfield, 34 miles (by rail) W.N.W. of Gladstone. *Co.* Deas Thompson (*ante*). *Ref.* G.S.Q. Pub. 21, p. 2 (1885).

6360. ——. *Assoc.with* Copper Pyrites, in small vein near Arthur's Reef. *Loc.* Targinnie Goldfield, 4 miles N.N.W. of Yarwun Rail. Stn. (N. Coast line), 15 miles (by rail and road) N.W.by W. of Gladstone. *Co.* Deas Thompson (*ante*). *Ref.* B.D.

6361. ——. *Assoc.with* Azurite, in quartz and felspathic rock. *Loc.* Targinnie Goldfield (*ante*). *Assay: See* No. 248. *Ref.* A.R., p. 104 (1907).

6362. ——. *Assoc.with* Azurite and Cuprite, in granite. *Loc.* Iveragh Copper Lode, Iveragh Cr., Boyne R., 20 miles S. of Gladstone. *Co.* Flinders; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 3 (1885).

6363. ——. *Assoc.with* Hematite, in quartz. *Loc.* Miriam Vale, 43 miles (by rail) S. byE. of Gladstone. *Co.* Flinders (*ante*). *Ref.* L.C.B.

6364. ——. In small quantities. *Assoc.with* other Copper Ores. *Loc.* Great Fitzroy Copper Mine, Mt. Chalmers, 4 miles N.W. of New Zealand Gully Rail. Stn., 19 miles (by rail and road) N.E. of Rockhampton, Cawarral Goldfield. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 216 (1907).

6365. ——. *Assoc.with* Silver, Cuprite, Tenorite, Cerussite, Iron Pyrites, Zinc Blende, and Barytes. *Loc.* Mt. Warminster, nr. Mt. Chalmers, 20 miles (by rail) N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* O.R.

6366. ——. *Assoc.with* Gold and other Copper Ores. *Loc.* Alliance Mine, Morinish Goldfield, 29 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* Q.M.

6367. ——. *Assoc.with* Copper Pyrites and Azurite. *Loc.* Conachan's Sel., W. of Quarry Cr., 3 miles E. of Stanwell Rail. Stn., 19 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

6368. ——. *Assoc.with* Native Copper, Cuprite, and Azurite, in epidote rock. *Loc.* Copper Deposits, Clairview, 12 miles N. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 141, p. 4 (1898).

6369. ——. *Loc.* Connor's Range, 15 miles N.W. of St. Lawrence. *Co.* Murchison (*ante*). *Ref.* Q.M.

6370. ——. *Assoc.with* other Copper Ores, in quartz reef in clay slates. *Loc.* Gogango Ranges, 4 miles from Gogango Rail. Stn. (Central line), 43 miles (by rail) S.W. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* Q.M.

6371. ——. *Loc.* Westwood, 31 miles (by rail) S.W. of Rockhampton (Central line). *Co.* Pakington (*ante*). *Ref.* Q.M.

6372. ——. *Assoc.with* Azurite and Magnetite. *Loc.* Kroombit Cr., 5 miles above Kroombit Hd. Stn., 55 miles S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

6372A.——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, Iron Pyrites, Hematite, Magnetite, and Limonite, in gossan lodes. *Loc.* M.L. (262), Kroombit Copper Mines, 4¼ miles E.S.E. of Kroombit Hd. Stn., 56 miles S.S.W. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* Q.G.M.J., vol. 7, p. 98 (1906).

6373. ——. *Assoc.with* Gold, Silver, Galena, Copper (native), Copper Pyrites, Redruthite, Cuprite, Azurite, Molybdenite, Iron Pyrites, and Ironstone, in granitic rock. *Loc.* Moonmera Copper Mines, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pubs. 143, p. 27 (1899); 156, p. 2 (1900); and 196, pp. 18-20 (1904).

6374. ——. *Assoc.with* Copper Pyrites, in quartzite rock. *Loc.* Old Dee Copper Mine, 3 miles N.E. of Mt. Morgan Rail. Stn., 27 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* A.R., p. 85 (1907).

6375. ——. *Assoc.with* Copper Pyrites, Tetrahedrite, Azurite, Galena, Zinc Blende, Iron Pyrites, and Calcite, in slate, diorite, andesite, etc. *Loc.* Blue Bell Copper Mine, Amamoor Cr., 19 miles S.S.E. of Gympie. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* Q.G.M.J., vol. 8, pp. 524-526 (1907).

6376. ——. *Assoc.with* Azurite and Cuprite. *Loc.* Luge-e-nor Lode, Calgoa Copper Mines, Thunder Cr., 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* B.D.

6377. ——. *Assoc.with* Copper Pyrites, Azurite, Galena, and Mispickel, in granitic dyke. *Loc.* Calgoa West Lode, Calgoa Copper Mines (*ante*). *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

6378. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tenorite, Azurite, Iron Pyrites, Hematite, and Limonite, in lodes in syenitic granite. *Loc.* Calgoa Copper Mines (*ante*). *Ref.* G.S.Q. Pub. 207, pp. 5-11 (1907).

6379. ——. *Assoc.with* Azurite. *Loc.* Federal P.A., Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Assay: See* No. 256. *Ref.* A.R., p. 100 (1907).

6380. ——. *Assoc.with* Gold, Iron Pyrites, Redruthite, Cuprite, Bismuthinite, Magnetite, and Limonite. *Loc.* Kabonga Mine, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 36 (1897), and G.S.M.

6381. ——. *Assoc.with* Gold and Azurite, in quartz leader. *Loc.* New Year's Reef, Kilkivan Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 3 (1886).

6382. ——. *Assoc.with* Azurite, in gossan. *Loc.* Mudloo Copper Lease, Marodian Goldfield, 5 miles N.N.W. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Yield:* Copper = 20 to 25 per cent. (hand picked). *Ref.* G.S.Q. Pub. 179, p. 10 (1902).

6382A.——. *Assoc.with* Redruthite. *Loc.* Sunnyside, Mudloo, Marodian Goldfield (*ante*). *Ref.* L.C.B.

6383. ——. *Assoc.with* Tetrahedrite, Cuprite, Azurite, and Hematite, in quartz. *Loc.* White Rocks Copper Lease, Marodian Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 11 (1902).

6384. Malachite. *Assoc.with* Azurite and Tile Ore, in quartz. *Loc.* Mt. Alice, S. of Bullock Cr., Gigoomgan Stn., 25 miles W.S.W. of Maryborough. *Co.* Lennox; *Dist.* Wide Bay. *Assay: See* No. 259. *Ref.* A.R., p. 112 (1907).

6385. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Tile Ore, and Azurite, in quartz. *Loc.* Teebar Copper Lode, Munna Cr., nr. Clifton Stn., 2 miles S. of Boompa Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 7 (1890), and G.S.M.

——. *See also under* "Copper carbonate."

Malakoff Mine, Thane's Cr. Goldfield. *Min.Ref.* Gold, *see* 3871.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 118.

Malbon River Mining Centre, Cloncurry. *Includes* Just-in-Time, Limestone Cr., Pindorah, Mt. Howard, Lady Maud, and Fountain Spring Groups. *Min.Ref.* Copper Ore, *see* 2019; Cuprite, 2403; Limonite, 5772-5775; Malachite, 6130-6134; Redruthite, 7234-7236; Tetrahedrite, 7757; Tile Ore, 2516-2518.

—— M.F. (2548), Cloncurry. *Min.Ref.* Cuprite, *see* 2404, 2405; Limonite, 5775; Malachite, 6133-6134; Redruthite, 7236; Tetrahedrite, 7757; Tile Ore, 2518.

Malboona Sub-artesian Bore. *See under* Artesian Bores. No. 329.

Malchi Creek, 5 miles N.N.E. of Stanwell. *Min.Ref.* Calcite, *see* 539; Manganese-dioxide, 6477.

Maleny. Par. of (Sel. 96v), 12 miles W.byN. of Yandina Rail. Stn. *Min.Ref.* Manganese-dioxide, *see* 6489.

Malone's Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

—— Silver Mine, 11 miles W. of Stanthorpe. *Min.Ref.* Calcite, *see* 488; Garnet, 3116; Copper Pyrites, 2185.

Malula Sub-artesian Bore. *See under* Artesian Bores. No. 321. *Min.Ref.* Coal, *see* 1834A.

Mama Bore. *See under* Artesian Bores. No. 226.

Malpas's Claim, Pinnacle Cr., W. of Fossilbrook. *Min.Ref.* Azurite, *see* 186A; Copper Pyrites, 2141A; Limonite, 5837A; Malachite, 6210A.

Malvern Cr., nr. Devoncourt Stn., S.S.W. of Cloncurry. *Min.Ref.* Limestone, *see* 619.

—— Downs Stn. (3 miles S.E. and 12 miles E. of). *Min.Ref.* Coal, *see* 1659B, 1659C.

—— Hills Sub-artesian Bore. *See under* Artesian Bores. No. 322.

—— Peaks, 38 miles E.byS. of Clermont. *Min.Ref.* Rock Crystal, *see* 7194.

Malwa Co. Gregory North Dist. *See map,* Pl. 20.

Mambare River, Gira Goldfield, Brit. New Guinea. *Min.Ref.* Gold (alluvial), *see* 3424; Osmiridium, 7058.

Mammoth Coal Mines. *See maps,* Pls. 10, 11, 33. Situated on Blackwater Cr., between Jellinbah on the Mackenzie River, and Blackwater Railway Station (Central line). Mammoth seam discovered in 1868. *Min.Ref.* Coal, *see* 1689.

GEOLOGICAL NOTE: The Coal Measures comprise sandstones, etc., belonging to the Dawson-Mackenzie or Upper Bowen Formation (Permo-Carboniferous). They contain very thick seams of a bituminous coal, are almost horizontal, and are of enormous extent. *See* G.S.Q. Pub. No. 155 for maps.

Manambar, 24 miles S.W. of Gympie. *Min.Ref.* Manganese-dioxide, *see* 6400.

Manaramby Cr. (White's), Scrub Paddock Diggings. *Min.Ref.* Gold (alluvial), *see* 3196.

Manchester Reef, Marengo Goldfield. *Min.Ref.* Copper carbonate, *see* 1916-1917; Gold, 4075; Selenite, 4644.

Maneroo Bores. *See under* Artesian Bores. No. 323.

—— Co. Mitchell Dist. *See map,* Pl. 18.

Manfred Co. Burke Dist. *See map,* Pl. 20.

—— Downs Run Bores. *See under* Artesian Bores. Nos. 324-326.

Manganese (Mn.). *Atom.wt.*, 54·93 *Sp.gr.* 8·0. *Colour*, reddish-white metallic, somewhat like cast iron. Brittle. Hard. Crystalline.

MINERALS: *See* Asbolane, "Manganese dioxide," Manganite, Psilomelane, Pyrolusite, Rhodochrosite, Rhodonite, Wad, Wolfram.

MINERAL NOTE: In Queensland manganese commonly occurs as Psilomelane in association with Rhodonite, Rhodochrosite, and Pyrolusite, and is of frequent occurrence with ores of iron, lead, copper, zinc, bismuth, and with Calcite, Fluorspar, Talc, Garnet, and Wolfram. The rocks in which manganese is found include kaolin, limestone, schists, serpentine, slate and other sedimentary rocks, chlorite, granite, greisen, etc. It is often found as Wad on or near Wolfram, being formed as a decomposition product of that mineral. It is common in the rocks of the Gympie Goldfield, in Middle Gympie Formation, but is an unfavourable feature in gold-mining, as gold is rarely present in quartz where the reefs on this field come in contact with slate that is manganiferous. Slate that contains graphite is a favourable feature under the same conditions.

USES: Manganese ores are smelted with iron to form ferro-manganese and spiegel-eisen, both these alloys being commonly used in the processes of hardening and toughening steel. With copper it forms a very tough alloy called manganese bronze. Compounds of manganese are used in glass-staining, pottery, dyeing, calico printing, as a flux in smelting ores, as a disinfectant, in the generation of chlorine gas, and in making cells for batteries in electrical work. The minerals Pyrolusite and Psilomelane are much in demand for chlorine making, on account of their high percentage of available dioxide, and these, with Asbolite, Braunite, Manganite, and Rhodochrosite, are also suitable for most other metallurgical processes. Rhodonite, in addition, is used as an ornamental stone for inlaid work on account of its pleasant pink colour.

GEOLOGICAL NOTE: Some miles to the south of Gympie there exists an enormous area of undeveloped manganese-bearing country lying as a belt between the Lower Gympie Formation (Permo-Carbonifercus) and serpentine, the manganese forming large irregular masses in slate, quartzites, and jasper. The country is difficult to prospect, being very rugged and mostly covered with dense scrub. Deposits occur in many other places, principally near Gladstone, in similar country. *See* G.S.Q. Pubs. 190, 194 for details.

MINERAL STATISTICS: *See tables and diagrams*, Pls. 40, 45, 46, 46A, 53.

STATISTICAL NOTE: Only a small quantity of manganese has been produced, the amount being 17,004 tons, having a value of £64,589, most of which has been obtained from the Gladstone District, and utilised by the Mount Morgan Gold Mining Company. Most of the manganese used in the Commonwealth is imported from Russian mines, and contains about 80 per cent. of available manganese dioxide.

DISCOVERY: The manganese deposits of Mt. Millar, near Gladstone, were found in 1895; those at Pie Creek, south of Gympie, in 1908.

BIBLIOGRAPHY: *Principal Ref.* Ball (L.C.), G.S.Q.P. Nos. 189 (1904), 194 (1904), Q.G.M.J. Rep. No. 43 (1904). *See* G.S.Q. Pub. List and Q.G.M.J. List for titles.

Manganese (occurrences, etc.). *See under* Gov. Ming. Jour., Report No. 43.

—— binoxide. *See* Manganese-dioxide, Pyrolusite, Psilomelane.

—— carbonate. *See* Rhodochrosite.

6386. **Manganese Dioxide.** Hill, on divide between Dugald and Argylla Waters, about 40 miles W.N.W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 7 (1885).

6387. ——. *Assoc.with* Cuprite, Malachite, Asbolane, and Garnet, in lode. *Loc.* Mountain Home Copper Mine, Mt. Norma, Elder Cr., 17 miles S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 15 (1885).

6388. ——. Gully, Fiery Cr., trib. of Leichhardt R., about 68 miles S. of Burketown. *Co.* Burke; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 10 (1885).

6389. ——. *Loc.* Police Cr., trib. of Gregory R., about 90 miles S.S.W. of Burketown. *Co.* Gregory; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 10 (1885).

6390. Manganese. In quartzite. Black Rock Waterhole, 4 miles N. of Cloncurry R., 23 miles S.byW. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 5 (1895).

6391. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Limonite, and Calcite, in limestone, quartz, and schist. *Loc.* Hilda M.L. (242) (Hilda Group), 20 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 183, 184 (1908).

6392. ——. *Assoc.with* Ironstone, in quartz. *Loc.* 2-Mile Cr. Diggings, 23 miles S.byW. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 104, p. 5 (1895).

6393. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Homeward Bound Reef, 4½ miles N.E.byN. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 10 (1887).

6394. ——. Por. 5v, Kalliwa, S.W. of Kalliwa Cr., 23 miles S.S.W. of Gin Gin Rail. Stn., 14 miles N.W. of Degilbo Rail. Stn. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 189, p. 9 (1901).

6395. ——. *Assoc.with* Rhodonite. *Loc.* Por. 5v, Mingo, 15 miles N.W. of Degilbo Rail. Stn. *Co.* Bowen (*ante*).

6396. ——. *Assoc.with* Gold and Ironstone, in quartz reef. *Loc.* Foot of Mt. Melville, nr. Mt. Shamrock, 2 miles N.byW. of Chowey Rail. Stn. (Gayndah line), 65 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Assay: See* No. 3570. *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

6397. ——. In slate. Min. Sel. (2307), 2½ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 189, p. 9 (1904).

6398. ——. Pors. 54v and 52v, Par. Degilbo, 3 miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Analysis:* Manganese = 52·0 per cent.; available Manganese-dioxide = 68·0 per cent.; Silica and insoluble = 6·5 per cent.; Phosphorus = 0·08 per cent.; Sulphur = 0·01 per cent.; Iron = 1·7 per cent. *Ref.* G.S.Q. Pub. 189, p. 9 (1904), and L.C.B.

6399. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Magnetite, Mispickel, Bismuth (native), Bismuthinite, Bismutite, Bismite, Erythrine, Viridite, Actinolite, Calcite, Chalcedony, and Epidote. *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn., 58 miles (by rail and road) W. of Maryborough (Gayndah line). *Co.* Cook (*ante*). *Analysis:* Bismuth oxide = 44·45, Cobalt = 4·75, Nickel = 0·68, Iron = 13·55, Manganese = 9·75, Lime and Magnesia = 19·92, Silica = 6·90 per cent. *Ref.* G.S.Q. Pubs. 60 (1890), 173 (1902), and 194 (1904), and G.S.M.

6400. ——. Manambar, 24 miles S.W. of Gympie. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* A.R., p. 68 (1906).

6401. ——. McIvor's Sel., Cadarga, 32 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. *Ref.* L.C.B.

6402. ——. *Assoc.with* Limonite. *Loc.* Stewart's Gt. Eastern Mine, Cadarga (*ante*).

6402A. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Limonite, in quartz. *Loc.* Cadarga Cr. Gold Mines, between Auburn R. and Cadarga Cr. (*ante*). *Ref.* Q.G.M.J., vol. 5, pp. 162, 163 (1904), and G.S.Q. Pub. 207, p. 11 (1907).

6403. ——. *Assoc.with* Gold, in quartz. *Loc.* South Cross Reef, Limestone, Palmer Goldfield, 60 miles S. of Laura Rail. Stn. (Cooktown line), 127 miles (by rail and road) S.W. of Cooktown. *Co.* Chelmsford; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 46, p. 1 (1889).

6404. ——. *Assoc.with* Quartz. On hill, N. of Mitchell R., below mouth of St. George R., 6 miles S.E. of Limestone, Palmer Goldfield. *Co.* Dagmar; *Dist.* Cook. *Ref.* G.S.Q. Pub. 46, p. 2 (1889).

6405. ——. *Assoc.with* Limonite and traces of Gold, in large lode. *Loc.* On hill, N. of Mitchell R., below mouth of St. George R. (*ante*). *Ref.* G.S.Q. Pub. 46, p. 2 (1889).

6406. ——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* Lady Franklin Reef, Caledonia Cr., br. of Goldsmith Cr., 9 miles S.E. of Charleston Rail. Stn. (Etheridge line). *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

6407. ——. *Assoc.with* Cassiterite and Ironstone, in altered sandstone. *Loc.* Tourmaline United Mine, on Baker's Cr., 4 miles W. of Watsonville, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 27 (1897).

6408. —— (earthy). *Assoc.with* Wolfram, Scheelite, Molybdenite, Bismuth (native), Bismuthinite, Bismutite, Cassiterite, Mispickel, and Scorodite, with traces of Iron Pyrites, Hematite, Limonite, Magnetite, etc., in irregular masses of quartz, in greisen belt. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbullah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6409. ——. *Assoc.with* Galena, Massicot, Anglesite, Cerussite, and Actinolite, in limestone and granite. *Loc.* Macrossan Mine, 2 miles E. of Chillagoe Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay: See* No. 28. *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

6410. ——. *Assoc.with* Native Copper, Tetrahedrite, Cuprite, Malachite, Azurite, Hematite, and Selenite, in quartz. *Loc.* Griffith Copper Lease, head of Julia Cr., 2 miles S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 5 (1891), and 134, p. 11 (1898), and G.S.M.

6411. ——. *Assoc.with* Tetrahedrite, Malachite, Ironstone, Limonite, and Siderite. *Loc.* Queenslander Copper Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

6412. ——. In quartz. *Loc.* Ord (on Mt. Garnet Rail. line), 120 miles W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* O.R.

6413. ——. *Assoc.with* Quartz Veins, in contorted mica and talc schist. *Loc.* Entrance of Mourilyan Harbour, 130 miles N.W. of Townsville. *Co.* Nares; *Dist.* Cook. *Ref.* B.D.

6414. ——. *Assoc.with* Gold, Bismutite, Magnetite, Limonite, Ruby, and Garnet, in alluvial deposits. *Loc.* Agate Cr., br. of Robertson R., 38 miles S. of Georgetown, 21 miles S.S.W. of Charleston, Etheridge. *Co.* Victor; *Dist.* Cook. *Ref.* L.B. 1, p. 940 (1887).

6415. ——. *Assoc.with* Asbolane (as Cobaltiferous Wad), in small quantities in clay matrix. *Loc.* Pittsworth, 36 miles (by rail) S.W.byW. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* G.S.M. and A.R., p. 144 (1908).

6416. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and Limonite, in quartz. *Loc.* Glenelg Reef, nr. Oakey Cr., 55 miles (by road) W.S.W. of Warwick. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 40, pp. 1, 2 (1887).

6417. ——. *Assoc.with* Psilomelane, Pyrolusite, and Limonite. *Loc.* Pikedale Hotel, 11 miles W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 95 (1898).

6418. ——. *Assoc.with* Copper Pyrites, Redruthite, Copper carbonate, Galena, Zinc Blende, and Ironstone, in lode. *Loc.* Pikedale Silver Mine, Woolshed Gully, Pikedale Hd. Stn., 20 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 87 (1898).

6419. ——. Glenlyon, 30 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, p. 95 (1898).

6420. ——. Six miles N. of Silver Spur Mine, Texas, 49 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* L.C.B.

6421. ——. Canal Cr. Goldfield, 28 miles W.byS. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 125, p. 29 (1897).

6422. ——. Occurs as lode several feet wide, sometimes 20 ft. thick. *Loc.* Manganese Hill, on Sandy Cr. road, 7 miles due west of Warwick. *Co.* Merivale (*ante*). *Yields:* 200 tons averaged 50 per cent. available Manganese-dioxide. *Ref.* B.D.

6423. ——. In lode. *Loc.* Mt. Gammie, 1½ mile from Thane's Cr., 25 miles W. of Warwick. *Co.* Merivale (*ante*). *Assay:* 48·9 per cent. of available Manganese-dioxide. *Ref.* G.S.Q. Pubs. 40, p. 3 (1887), 189, p. 10 (1904).

6424. ——. Pors. 95v, 96v, and 43v, Par. of Rosenthal, 6 miles S.W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 194, p. 66 (1904).

6425. ——. *Loc.* Darkey Flat, Talgai Goldfield, 21 miles N.N.W. of Warwick. *Co.* Merivale (*ante*). *Ref.* L.B. 3, p. 677 (1895).

6426. ——. *Assoc.with* Gold and Limonite, in quartz leaders. *Loc.* Golden Gate Lease, 3 miles W. of Pratten, Talgai Goldfield (*ante*). *Ref.* G.S.Q. Pub. 205, p. 29 (1906).

6427. ——. *Assoc.with* Rhodonite and Rhodochrosite. *Loc.* The Glen, Town Common, Warwick, 169 miles (by rail) S.W. of Brisbane. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* L.C.B.

6428. ——. On knoll, nr. Horse Cr., trib. of Gregory R., 50 miles S.S.W. of Cloncurry. *Co.* Merlin; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 10, p. 9 (1885).

6429. ——. Tin Mines, Coolgarra, 12 miles (by coach) E.byN. of Mt. Garnet Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 125, p. 48 (1897).

6429a. ——. As lode. One mile N. of Coolgarra (*ante*). *Ref.* A.R., p. 229 (1910).

6430. Manganese (earthy). *Assoc.with* Wolfram, Scheelite, Cassiterite, Molybdenite, and Monazite, with traces of Cuprite, Malachite, Azurite, Iron Pyrites, Limonite, Mispickel, and Scorodite, in irregular masses and in defined lodes, in slate and greisen. *Loc.* Nettle's Cr. Wolfram Mines, 4 miles E. and 3 miles S.E. of Coolgarra, between 10 and 14 miles N.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* B.D.

6431. ——. *Assoc.with* Gold, in quartz reef. *Loc.* ½-mile N.E. of Mt. Deane, E.byS. of Mt. Leyshon, 20 miles S.S.E of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 14 (1891).

6432. ——. *Assoc.with* Gold, Iron Pyrites, Magnetite, Hematite, Limonite, Chalcanthite, and Talc, in porphyry rock. *Loc.* Mt. Leyshon Mine, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* G.S.Q. Pubs. 18, p. 2 (1885), 73, p. 13 (1891).

6433. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Lissner Reef, 7 miles W.N.W. of Lamond's Sel., 41 miles (by rail and road) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 13 (1891).

6434. ——. *Assoc.with* Galena, Copper carbonate, Cerussite, Chrysocolla, and Garnet, in quartz. *Loc.* Black Star Lease (116), Kangaroo Hills Mineral Field. 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

6435. ——. *Assoc.with* Magnetite and Minium, in lode. *Loc.* Black Star S. Lease (199), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

6436. ——. *Assoc.with* Azurite, Malachite, Cerussite, and Galena, in kaolin. *Loc.* Bonnybrook Lease (178), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), 82, p. 4 (1892).

6437. ——. *Assoc.with* Lievrite, Cerussite, and Garnet, in lode. *Loc.* Boomerang Lease (186), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

6438. ——. *Assoc.with* Native Silver, Galena, Cerussite, Malachite, Chrysocolla, Mispickel, Zinc Blende, and Hematite, in kaolin lode. *Loc.* Hidden Treasure Lease (165), Running R., Kangaroo Hills Mineral Field (*ante*). *Assays: See* No. 1241. *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), 82, p. 7 (1892).

6439. ——. *Assoc.with* Galena, Cerussite, and Ironstone, in chloritic lode. *Loc.* Hidden Treasure E. Lease (166), Running R., Kangaroo Hills Mineral Field (*ante*). *Assays: See* No. 2966. *Ref.* G.S.Q. Pubs. 71, p. 9 (1891), 82, p. 7 (1892).

6440. ——. *Assoc.with* Galena, Cerussite, Malachite, Chrysocolla, Lievrite, and Garnet, in lode. *Loc.* Mt. Hishon Lease (210), Kangaroo Hills Mineral Field (*ante*). *Assay: See* No. 2969. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

6441. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Zinc Blende, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 82, p. 3 (1892).

6442. ——. *Assoc.with* Cerussite, in lode. *Loc.* Red Rover Lease (179), Kangaroo Hills Mineral Field (*ante*). *Ref.* (and *Assay*) G.S.Q. Pub. 82, p. 4 (1892).

6443. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Vigilant Lease (193), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 7 (1892).

6444. ——. *Assoc.with* Ironstone, Copper carbonate, and Cerussite, in lode. *Loc.* White Star Lease (160), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p 5 (1892).

6445. ——. *Assoc.with* Copper Pyrites, Minium, Cerussite, Malachite, Galena, Mispickel, Ironstone, and Iron Ochre. *Loc.* Colorado Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Assays: See* No. 2983. *Ref.* G.S.Q. Pub. 26, p. 7 (1886).

6446. ——. *Assoc.with* Gold, Copper Pyrites, Cuprite, Malachite, Azurite, Galena, Native Bismuth, Bismuthinite, Bismutite, Bismite, Hematite, and Ironstone. *Loc.* Daisy Bismuth Mine, 3 miles E. of Eukalunda, 95 miles S.W.byS. of Bowen, Sellheim Mineral Field. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 57, pp. 7, 8 (1889), and G.S.M.

6447. ——. *Assoc.with* Copper Pyrites, Hematite, Bismuth, and other Bismuth Ores, in lode. *Loc.* Eukalunda Bismuth Mine, 3 miles E. of Eukalunda (*ante*). *Ref.* G.S.Q. Pub. 57, p. 8 (1889).

6448. ——. *Assoc.with* Gold, Hematite, Copper oxides, and Copper carbonates, in gossan lode. *Loc.* Peak Downs Copper Mine, Copperfield, 4 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Assay: See* No. 4160. *Ref.* G.S.Q. Pub. 27, p. 7 (1886).

6448A——. *Assoc.with* Malachite, Azurite, and Hematite, in granite. *Loc.* Emperor P.P.A. (320), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, p. 25 (1910).

6449. ——. In clay slate. *Loc.* Iron Mountain, Balcomba Range, 24 miles N. of Duaringa Rail. Stn. (Central line), 90 miles (by rail and road) W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 9 (1901).

6450. ——. In clay slates. Slaty Cr., E. of Mackenzie R., 5 miles below Wallbury Stn., 5 miles N. of Herbert Cr. Rail. Stn. (Central line), 59 miles (by rail and road) W.S.W. of Rockhampton. *Co.* Pakington; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 9 (1901).

6451. ——. *Assoc.with* Gold, as vein in quartzite. *Loc.* Collins's Banana Plantation, Por. 66, Par. of Bunya, South Pine R., ½-mile S. of Curtis's Crossing, 11 miles N.N.W. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* O.M.

6452. ——. In clay slate and jasperoid. *Loc.* Dandy's Knob, Par. of Kholo, 9 miles N. of Ipswich. *Co.* Stanley (*ante*). *Assay:* 47·4 per cent. *Ref.* G.S.Q. Pub. 194, p. 59 (1904), and A.R., p. 121 (1904).

6452A.——. *Assoc.with* Cobalt, in nodules in alluvium. *Loc.* Eagle Junction, 4 miles (by rail) N. of Brisbane (Suburban line). *Co.* Stanley (*ante*). *Ref.* A.R., p. 193 (1909).

6453. ——. Pors. 56 and 124, Mt. Crosby, Par. of Kholo, 6½ miles N.E. of Ipswich. *Co.* Stanley (*ante*). *Analysis:* Manganese-dioxide = 42·4 per cent.; Iron = 0·67 per cent.; Silica = 27·6 per cent. *Ref.* G.S.Q. Pub. 194, p. 60 (1904).

6454. ——. In jasperoid clay slate. *Loc.* William's Hill, Por. (91), Parish of Kholo, 7 miles N. of Ipswich Rail. Stn. *Co.* Stanley (*ante*). *Ref.* G.S.Q. Pub. 194, pp. 59, 60 (1904).

6455. ——. Par. of Moggill, 10 miles N.E. of Ipswich, and about 10 miles W.byS. of Brisbane. *Co.* Stanley (*ante*). *Ref.* O.R.

6456. ——. *Assoc.with* Ironstone, in vein. *Loc.* Dennis's Sel. (381), 5 miles N. of Beenleigh Rail. Stn. (South Coast line), 29 miles (by rail and road) S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 36, p. 2 (1887).

6457. ——. *Assoc.with* Ironstone, in quartz reef. *Loc.* In gully on Jamieson's Sel. (36), Wonga Wallen Cr., Coomera R., 38 miles S.E. of Brisbane, on South Coast line. *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 51, p. 5 (1889).

6458. ——. *See* No. 6459.

6459. ——. In clay slates. *Loc.* Auckland Hill, Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Analysis:* Manganese = 46·7 per cent., Manganese-dioxide = 69·4 per cent., Silica = 7·6 per cent., Iron = 2·2 per cent., Phosphorus = 0·33 per cent., Sulphur = trace. *Ref.* G.S.Q. Pub. 194, pp. 40, 41 (1904, and P.R.S.Q., vol. 4, p. 61 (1887).

6460. ——. *Assoc.with* Chloropal, in slates and quartzites. *Loc.* nr. jetty, Auckland Point (*ante*). *Ref.* B.D.

6460A. ——. In quartzose slates. *Loc.* Cairncross's Workings, Por. 115, Toolooa, 4 miles N.E. of Calliope, 9 miles S. of Gladstone. *Co.* Clinton (*ante*).

6461. ——. *Assoc.with* Ironstone, in decomposed clay slate. *Loc.* Gardner's Workings, on Por. 364, East Stowe, Calliope, 10 miles S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Analysis:* Manganese-dioxide = 43·6 per cent., Manganese = 29·7 per cent., Iron = 22·1 per cent. *Ref.* G.S.Q. Pub. 194, pp. 45, 46 (1904).

6462. ——. In slate. Mt. Crosisco Workings, Por. 13v, East Stowe, 8 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 47 (1904).

6463. ——. In slate. Shaw and Morris's Workings, 3½ miles N. of Calliope, 8½ miles S.S.W. of Gladstone. *Co.* Clinton (*ante*). *Analysis:* Manganese = 46·7, Manganese-dioxide = 69·5, Iron = 2·7, Silica = 4·5, Phosphorus = 0·14 per cent. *Ref.* G.S.Q. Pub. 194, p. 44 (1904).

6464 ——. In slate. *Loc.* Torbeck's and Kirkwood's Workings, Calliope R., 1 mile S.E. of Mt. Beecher, 8 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Analysis:* Manganese-dioxide = 54·4, and Manganese = 37·7 per cent. *Ref.* G.S.Q. Pub. 194, p. 46 (1904).

6465. ——. In clay slate. *Loc.* Mt. Miller Mine, Calliope, 1 mile S. of Mt. Miller Rail. Stn. (North Coast line), 7 miles (by rail and road) W.S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, pp. 38-40 (1904), and A.R., p. 121 (1907).

6466. Manganese. In slate. Boat Cr. Workings, S. of Boat Cr., Targinnie Cr., 7 miles W. of Gladstone. *Co.* Clinton (*ante*). *Shipments:* 144 tons of ore, averaging 65·5 per cent. to 70·8 per cent. of Manganese-dioxide. *Ref.* G.S.Q. Pub. 194, pp. 43, 44 (1904).

6467. ——. In red jasperoid slate. *Loc.* Morgan and Reid's Workings, between Targinnie and Calliope R., 8 miles W.byS. of Gladstone. *Co.* Clinton (*ante*). *General Averages:* Manganese-dioxide = 67·1 per cent. to 72·70 per cent. *Ref.* G.S.Q. Pub. 194, pp. 42, 43 (1904).

6468. ——. In clay slate. One Tree (or Round) Hill Workings, 2 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 45 (1904).

6469. ——. In veinlets. E. side of Compigne Island, 3 miles N. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 47 (1904).

6470. ——. In slate. S. end of Picnic Island, 1½ mile N.N.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 47 (1904).

6471. ——. In quartz. Quarry, Turtle Island, 2½ miles N. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 194, p. 47 (1904).

6472. ——. In slate and quartz. Lee's Manganese Outcrop, 1 mile N.E. of Targinnie Township, 5 miles N.N.W. of Yarwun Rail. Stn. (North Coast line), 15 miles (by rail and road) N.W.byW. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 194, p. 47 (1904).

6473. ——. Ulam Goldfield, 3 miles S. of Toonda Rail. Stn. (North Coast line), 44 miles (by rail and road) W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* A.R., p. 111 (1907).

6474. —— (earthy). *Assoc.with* Wolfram, Molybdenite, Native Bismuth, Bismutite, and Tungstic Ochre, with traces of Copper Pyrites, Tenorite, Iron Pyrites, Hematite, etc., in defined quartz lodes in greisen and mudstone. *Loc.* Wolfram Mines, Rosedale, 34 miles (by rail) N.W. of Bundaberg (North Coast line). *Co.* Flinders; *Dist.* Port Curtis. *Ref.* B.D.

6475. ——. In many localities, Cawarral Goldfield, 15 miles N.N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.M.

6476. ——. Coorooman, 23 miles (by rail) N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Assays:* Manganese-dioxide = 60 and 70 per cent. *Ref.* G.S.Q. Pub. 194, p. 22 (1904).

6477. ——. Malchi, 5 miles N.N.E. of Stanwell, 21 miles (by rail and road) W.S.W. of Rockhampton (Central line). *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

6478. ——. *Assoc.with* Limonite, in quartz veins. *Loc.* Taranganba Gold Mine, 1½ mile S. of Yeppoon, 42 miles (by rail and road) N.E.byN. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 50, p. 3 (1889).

6479. ——. In large lode several miles long, containing up to 20 per cent. of Manganese-dioxide. *Loc.* Heads of Alma Cr., Pibald, nr. Dundee, 20 miles S. of Westwood Rail. Stn. (Central line), 51 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* B.D.

6480. ——. *Assoc.with* Magnetite, Hematite, Iron Pyrites, Copper Pyrites, and Copper carbonate. *Loc.* Callide or 5-Mile Copper Mines, Kroombit, 50 miles S.S.W. of Gladstone. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 194, p. 47 (1904).

6481. ——. Raspberry Cr., Mt. Morgan, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* L.C.B.

6482. ——. In clay slates. *Loc.* Por. 856, Walla, 5 miles S.S.W. of Gin Gin Rail. Stn. (Mt. Perry line), 34 miles (by rail and road) W. of Bundaberg. *Co.* Bowen; *Dist.* **Wide Bay.** *Analysis:* Manganese = 42 per cent., Manganese-dioxide = 67 per cent., Silica and insoluble = 16 per cent. *Ref.* G.S.Q. Pub. 189, p. 5 (1904).

6483. ——. In clay slate. Por. 917, Walla (*ante*). *Analyses:* (1) Manganese = 48·4, Manganese-dioxide = 76·5 per cent.; (2) Manganese = 47·2, Manganese-dioxide = 67·7, Silica and insoluble = 8·2, Phosphorus = 0·07, Sulphur = trace, Iron = 0·91 per cent. *Ref.* G.S.Q. Pub. 189, pp. 8, 9 (1904).

6484. ——. In slate. Por. 1033, Walla (*ante*). *Analyses:* (1) Manganese = 40, Manganese-dioxide = 64, Silica and insoluble = 20 per cent.; (2) Manganese = 47, Manganese-dioxide = 75 per cent. *Ref.* G.S.Q. Pub. 189, pp. 6, 7 (1904).

6485. ——. In clay slate. Por. 1147, Walla (*ante*). *Analysis:* Manganese-dioxide = 74 per cent. *Ref.* G.S.Q. Pub. 189, p. 8 (1904).

6486. ——. *Assoc.with* Asbolane and Nickel, in cobalt lode. *Loc.* Mt. Clara Hills, Black Snake, 7 miles S. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Assay: See* No. 122. *Ref.* G.S.Q. Pubs. 28 (1886), 38 (1887), and G.S.M.

6487. ——. *Assoc.with* Cobalt, Rhodochrosite, and Rhodonite, in serpentine. *Loc.* Mt. Cobalt, Black Snake (*ante*). *Ref.* (and *Analyses*) G.S.Q. Pub. 169, pp. 16-19 (1901).

6488. ——. *Assoc.with* Cobalt Oxide, Rhodochrosite, Rhodonite, Nickel, and Copper Oxide, in serpentine. *Loc.* Mt. Coora, Black Snake (*ante*). *Analyses: See* No. 1837. *Ref.* G.S.Q. Pubs. 28 (1886), 38 (1887), 48 (1888), and 169, pp. 16-19 (1901).

6489. ——. Bonney's Sel. 96v, Par. of Maleney, Chinaman's Cr., Mary R., 12 miles W.byN. of Yandina Rail. Stn. (North Coast line), 81 miles (by rail and road) N.byW. of Brisbane. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* B.D.

6489A.——. Mt. Walli, Upper Mary River. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* B.D. A large deposit of manganese is said to exist on this mountain, but the locality has not been officially examined.

6490. ——. *Assoc.with* Gold and Native Arsenic, in porphyry. *Loc.* Long Tunnel P.C., Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 3 (1886), and G.S.M.

6491. ——. As bunches, in jasper. Mt. Colo, Marodian Goldfield, 12 miles N.byE. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 14 (1902).

6492. ——. Marodian Goldfield, 8 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Assay:* Manganese-dioxide = 83·9 per cent. *Ref.* A.R., p. 121 (1907).

6493. ——. In quartzite and shale. *Loc.* Mt. Nansen Mine, Mary Cr., br. of Eel Cr., W. of Por. 1386, Par. of Glastonbury, 7 miles S.W. of Gympie. *Co.* Lennox (*ante*). *Assay:* Manganese = 50·0, Manganese-dioxide = 75·9 per cent. *Ref.* A.R., p. 171 (1908), and A.R.D.M., p. 169 (1909).

6493A.——. Cross's Sel., adjoining Nansen's, on br. of Eel Cr., Mary R., 7 miles S.W. of Gympie (*ante*). *Assay:* Manganese = 42·7, Manganese-dioxide = 50·2 per cent. *Ref.* A.R., p. 192 (1909), and A.R.D.M., p. 169 (1909).

6494. ——. In quartzite and shale. *Loc.* Skyring's Mine, Pie Cr., W. of Por. 1335, Par. of Glastonbury, 10½ miles S.S.W. of Gympie. *Co.* Lennox (*ante*). *Ref.* B.D., and A.R.D.M., p. 169 (1909).

6494A. ——. *Assoc.with* Asbolane, in lode. *Loc.* Pie Cr., W. of Por. 1335, Par. of Glastonbury (*ante*). *Assay:* Manganese = 6·6 per cent, Cobalt = 7·2 per cent. *Ref.* A.R., p. 151 (1908).

6494B.——. P.A. 742, Brooyar, Woolooga Estate, 36 miles (by rail) N.W.byW. of Gympie (Kilkivan Br. line). *Co.* Lennox (*ante*). *Assays:* Manganese = 48·3 and 50·9 per cent. *Ref.* A.R., p. 202 (1909).

6495. ——. Devil's Mountain, 10 chain road, 17 miles N.W. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* A.R., p. 160 (1908). Note: Large deposits are exposed on the surface.

6496. ——. Rigo, Broad Arrow, 36 miles S.E. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 56, p. 2 (1889).
See also under Psilomelane and Pyrolusite.

Manganese carbonate. *See* Rhodochrosite.

—— Hill, 7 miles W. of Warwick. *Min.Ref.* Manganese-dioxide, *see* 6422.

Manganese-iron Tungstate. *See* Wolfram.

—— Oxides. *See* Asbolane, Manganite, Manganese-dioxide, Psilomelane and sub-variety Wad, and Pyrolusite.

—— Silicate. *See* Rhodonite.

—— Spar. *Syn.* Rhodonite.

Manganite, *Syn.* Grey Oxide of Manganese. *Compo.*, Hyd. oxide of manganese. *Colour*, steel-grey, iron-black. *Streak*, reddish-brown to black. *H.* = 4. *Sp.gr.* = 4·2-4·4. *Contents* (*max.*), Manganese 62 per cent.

6497. ——. *Assoc.with* Rhodochrosite. *Loc.* Broken Hill Mine, Cloncurry, about 480 miles (by rail) W.byS. of Townsville. *Co.* Beaconsfield; *Dist.* **Burke.**

6498. —— (crystalline). *Loc.* Blackbutt, 14 miles W.byS. of Benarkin Rail. Stn. (Brisbane-Valley line), 125 miles (by rail and road) W.N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.**

Manning 1 and 2 N. Mines, Reid's Cr. Goldfield. *Min.Ref.* Bornite, *see* 417.

Manningham Sub-artesian Bores. *See under* Artesian Bores. No. 327.

Manton Cr., trib. of Don R. *Min.Ref.* Gold (alluvial), *see* 3273B.

—— Rail. Stn. (Northern line). *See under* Double-Barrel Cr.

Manuem (Par. of) (Por. 5v), N.W.byN. of Toowoomba. *Min.Ref.* Rutile, *see* 7323B.

Manufacturers' Raw Material. *See under* the following:—

Fire resisting material
Gas making.
Incandescent material.
Kaolin
Limestone.
Phosphates.
Pigments.
Plaster of Paris.
Portland Cement.
Salt manufacture.
Soap making

See also under names of metals and minerals.

Manuka Co. Gregory North Dist. *See map,* Pl. 20.

—— Run Artesian Bores. *See under* Artesian Bores. Nos. 328, 329.

Manukau Mine, Mt. Victoria, W.S.W. of Mt. Morgan. *Min.Ref.* Gold, *see* 4373; Hematite, 4801.

Many Peaks Copper Mines. *See maps,* Pls. 2, 3, 34. Deception Cr., 58 miles (by rail) S. of Gladstone. *Lat.,* 24° 30′ S.; *Long.,* 151° 10′ E. Discovered in 1896 by Lynch and Bailey. (Q.G.M.J., vol. xi., p. 436).

Mineral Statistics: *Included in* Gladstone returns.

Mineral References: Azurite, *see* 243a; Calcite, 259; Native Copper, 2009; Copper Pyrites, 2287, 2287a; Cuprite, 2472; Hematite, 4785; Iron Pyrites, 5364; Limonite, 5907; Magnetite, 6035; Malachite, 6352; Pyrrhotite, 7161c; Tile Ore, 2570. *See also under* Govt. Mining Jour. Special Reports, No. 109.

Discovery: Copper was first found here on 16th July, 1898.

Railway Base. Many Peaks Rail. Stn. is the base for the following:—Bompa Goldfield; Bompa Copper Mines and Bompa Silver-Lead Mines; Pinnacle Copper Mines; Glassford Cr. Copper Mines; Mt. Cannindah Gold and Copper Mines; Many Peaks Copper Mines; and Mt. Hector Copper Mine.

Maori Chief Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1101.

Map of Queensland (general). *See map,* Pl. 1.

Mapleton, 7 miles N.W. of Nambour Rail. Stn. *Min.Ref.* Natrolite, *see* 6900.

Maramie Co. Cook Dist. *See map,* Pl. 8.

Maranoa Co. Maranoa Dist. *See map,* Pl. 12.

Maranoa District—

Situation, Etc.: *See maps,* Pls. 12, 13. (*Lat.,* 25° and 29°; *Long.,* 146° and 150°). It is bounded on the N.E. by the Leichhardt District, on the E. by the Darling Downs, on the S. by the State of New South Wales (*Lat.* 29°), and on the W. by the District of Warrego. The principal Rivers are Culgoa, Balonne, Ballandoon, Narau, Condamine, Moonie, and Barwon.

Area: 39,235 sq. miles.

Principal Centre: Roma, *which see.*

Counties:

Belmore Co., Alton, Bollon, Dareel, Dirranbandi, Hebel, Mungindi, St. George.
Bundara Co., Policeman Cr., Mt. Elliott.
Cassilis Co. Cogoon Co.
Dublin Co., Cogurra, Donnybrook, Mitchell, Mungallala.
Elgin Co., Surat, Warroo, Weribone.
Kennedy Co. Maranoa Co. Mungallala Co. Nebine Co. Tomoo Co. Ularunda Co.
Waldegrave Co., Blythdale, Bungeworgorai, Bungil Cr., Dargal Cr., Hodgson, Muckadilla, Poybah, Roma, Taboonbay, Yingerbay, Yuleba (old), Yuleba (new).
Warrong Co., Mt. Moffatt.

—— Downs Bore. *See under* Artesian Bores. No. 330.

—— Range. *Min.Ref.* Calcite, *see* 522; Limonite, 5896.

—— River, 40 miles N. of Mitchell Rail. Stn. *Min.Ref.* Coal, *see* 1706a. *Min. Note.*—A coal seam is exposed on the bank of the river at Forest Vale Cattle Station., thickness or quality not known.

Marari Creek, br. of Eel Cr., S.S.W. of Gympie. *Min.Ref.* Copper Pyrites, *see* 2324; Redruthite, 7307.

Marathon Bores. *See under* Artesian Bores. Nos. 331, 332.

—— Railway Station Bore. *See under* Artesian Bores. No. 76.

Marble. *Var. of* Calcite, *which see* for mineral references, under sub-heading "Marble." *See also* general note *under* Calcium.

—— Arch Opal Mine, N.N.W. of Toompine. *Min.Ref.* Opal (precious), *see* 6942.

—— Cr., Calcifer. Mineral References: Azurite, *see* 194; Chrysocolla, 1517; Copper carbonate, 1895; Cuprite, 2434, 2435; Hematite, 4710-4712; Magnetite, 5987, 5988; Malachite, 6227, 6228; Minium, 6581; Tenorite, 7722; Tetrahedrite, 7762; Tile Ore, 2549.

Marble Island (Duke Group). *See maps,* Pls. 2, 3. N.E.byE. of St. Lawrence *Lat.,* 21° 59′ S.; *Long.,* 150° 10′ E. *Min.Ref.* Limestone, *see* 688; Magnetite, 6049; Marble, 600.

Geological Note: The island is made up of ferruginous slates and limestones. Small outcrops of limestone are exposed on the main portion of the island, but an important deposit is exposed on the extreme point of the north-western headland. *See* G.S.Q. Pub. No. 194 for details.

Marblestone, 20 miles S. of Gladstone. *Min.Ref.* Calcite, *see* 593; Copper carbonate, 1955; Limestone, 667; Marble, 593.

—— Road (Calliope to Marblestone). *Min.Ref.* Limestone, *see* 668.

Marcasite. *Syn.* Prismatic Iron Pyrites, Radiated Pyrites. *Compo.,* Sulphide of iron. *Colour,* pale bronze-yellow, greyish. *Streak,* greyish or brownish-black. *H.* = 6-6·5. *Sp.gr.* = 4·6-4·8. *Contents* (*max.*), Sulphur, 53 per cent., Iron 46 per cent.

6499. ——. *Assoc.with* Gold, in quartz. *Loc.* Problem Mine, 7 miles E.byN. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* **Burke.** *Ref.* G.S.M.

6500. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Azurite, and Galena, in quartz. Black Watch Reef, Scrub Paddock Diggings, 13 miles N.N.E. of Nanango, 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* **Burnett.** *Assay:* Gold = 4 oz. 15 dwt., Silver = 11 oz. *Yield:* Gold = 1 oz. 9 dwt. per ton; Silver = 1 oz. 16 dwt. per ton. *Ref.* G.S.Q. Pub. 29, p. 3 (1886).

6501. ——. *Assoc.with* Gold and Copper Ores, in quartz. Havelock Mine, 5 miles S. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* **Cook.** *Ref.* G.S.M. and G.S.Q. Pub. 219, p. 11 (1909).

6502. ——. *Assoc.with* Copper Pyrites and Chalcanthite. Chance Tin Mine, 1 mile S.E. of Watsonville, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

6503. ——. Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 56 (1900).

6504. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Chalcanthite, Copper carbonate, Mispickel, Cassiterite, Wolfram, Limonite, and Red and Yellow Ochre. *Loc.* Try Again and Chance Tin Mines, Watsonville, head of James Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

6505. ——. *Assoc.with* Copper Pyrites. St. Patrick's Day Mine, Watsonville (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

6506. ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende, in quartz. Try-No-More Silver Mine, Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

6507. ——. In diorite and porphyry. 70-Mile Range, between Burdekin and Cape R., 19 miles (by road) S. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North.

6508. ——. In quartz. Happy Valley Goldfield, about 40 miles (by road) S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

6509. ——. *Assoc.with* Gold, Copper Pyrites, and Mispickel, in quartz. Frederick I. Reef, Peter's Cr., Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 88, p. 1 (1893), and G.S.M.

6510. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Mispickel, in quartz and steatite. Victor Tunnel Mine, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 88, p. 5 (1893), and G.S.M.

6511. ——. *Assoc.with* Gold, in alluvial deposits. Cockson's Claim, Old Cricket Ground, Black Ridge, 12¾ miles N.N.W. of Clermont Rail. Stn. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 201, p. 41 (1906).

6512. ——. *Assoc.with* Gold, in alluvial deposits. Daintree's Knob, Black Ridge (*ante*). *Ref.* G.S.Q. Pub. 201, p. 28 (1906).

6513. Marcasite. *Assoc.with* Gold in quartz. Somersetshire Reef, McDonald's Flat, 4 miles S.S.E. of Clermont Rail. Stn., Clermont Goldfield. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.M.

6514. ——. *Assoc.with* Gold, in alluvial deposits. All Nations' Claim, Victoria Lead, The Springs, 11 miles N.N.W. of Clermont Rail. Stn., Clermont Goldfield (*ante*). *Ref.* G.S.Q. Pub. 201, p. 22 (1906).

6515. ——. *Assoc.with* Gold, Epsomite, Ironstone, Psilomelane, in alluvial deposits. Paterson's Claim, McMaster's Top Camp, 14 miles N.W.byN. of Clermont Rail. Stn., Clermont Goldfield. *Co.* Dickson; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 201, p. 63 (1906).

March Co. Wide Bay Dist. *See map,* Pl. 4.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4517.

Marching-through-Georgia Mine, Palmer Goldfield. *Min.Ref.* Kaolin, *see* 5675.

Marchmont Bore. *See under* Artesian Bores. No. 199.

Mareeba, 46 miles (by rail) W.S.W. of Cairns. The junction station of the Atherton and Chillagoe lines, and railway base for the Mareeba Goldfield and the Tinaroo Tin and Wolfram Mines. *Min.Ref.* Ottrelite, *see* 7059.

Mareeba Goldfield—

Situation: *See maps,* Pls. 8, 9, 22. The field is about 5 miles S.E. of Mareeba Rail. Stn., 51 miles (by rail and road) W.S.W. of Cairns. Included in Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* Cook. Centre about *Lat.* 17° 0′ S.; *Long.* 145° 30′ E.

Discovery: Payable gold reef discovered by Messrs. Hort and Finlayson on 21st February, 1893.

Population: Goldfield, 18; Township, 882 (estimated by Warden, 1910. No later return).

Proclamation of Field: First (and only one) gazetted, 7th June, 1905, as follows:—Commencing at the confluence of Tinaroo Creek with the Barron River, and bounded thence by the right bank of the Barron River downwards north-easterly to the confluence of the Clohesy River by the left bank of the Clohesy River upwards south-easterly to its extreme head in the range forming the eastern watershed of the Barron River; by that range and the range forming the southern watershed of Emerald Creek and Tinaroo Creek south-westerly to the Barron River; and by the right bank of that river downwards to the point of commencement.

Area: 125,440 acres (196 sq. miles).

Mineral Statistics: *All included in* "Other Goldfields." *See tables,* Pls. 36, 46, 46A.

Mineral References: Gold, *see* 3773-3776; Antimony (Stibnite), 7632; Zinc Blende, 8089; Iron (Hematite), 4721, (Iron Pyrites) 5079, 5080.

Geological Note: The country rocks consist of clay slates and schists covered in places by flows of basalt. Mareeba township is situated on basalt. Auriferous quartz reefs occur in the slates and schists.

Geological Publications: Nos. 97 (1894), 119 (1898). *See under* Geol. Surv. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Herberton.

Marengo Cr., 19 miles S. of Bowen. *Min.Ref.* Hornblende, *see* 4836.

Marengo Goldfield—Unproclaimed.

Situation: *See maps,* Pls. 16, 17. The field is about 24 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. Centre about *Lat.* 20° 25′ S.; *Long.* 143° 56′ E.

Discovery: The reefs were opened up in 1871.

Mineral Statistics: *Included in* "Other Goldfields." *See tables,* Pls. 36, 46, 46A.

Mineral References: Gold, *see* 4074-4077; Silver, 7490; Copper (Azurite), 215A, (Copper) 1846, (Copper carbonate) 1916-1918, (Copper Pyrites) 2240, 2240A, (Malachite) 6290; Iron (Iron Pyrites), 5275, 5276, (Ironstone) 5555; Ochre (Yellow), 5935. Other Minerals: Rock Crystal, 7193; Selenite, 4644.

Geological Note: The whole of the field is made up of granite rocks with small areas of gneiss, mica schist, and unaltered shales, etc. The granite is usually micaceous, but often hornblendic, and is frequently intruded by felspar porphyry dykes. There are several gold-bearing reefs exposed on the field, a number of which have been worked to a limited extent.

Geological Publications: Nos. 5 (1879), 48 (1888). *See under* Geol. Surv. Pub. List. for title.

Warden: Stationed at Bowen. Inspector of Mines: Stationed at Charters Towers.

Mare's Nest Creek, S.S.E. of Bowen. *Min.Ref.* Copper Pyrites, *see* 2239A; Cuprite, 2459; Hematite, 4742; Limonite, 5879A; Malachite, 6291, 6291A; Redruthite, 7297A; Tile Ore, 2563B.

Marga Co. Cook Dist. *See map*, Pl. 8.

Marguerite M.C. (151), Cloncurry. *Min.Ref.* Calcite, *see* 460; Ferro-Calcite, 574; Limonite, 5794; Malachite, 6155; Tourmaline, 7816.

Maria Creek, 133 miles W.byS. of Rockhampton. *Min.Ref.* Mineral Water, *see* 6571.

Geological Note: The rocks in this locality appear to belong to the Tolmies Coal Measures (Permo-Carboniferous). Boring operations failed to discover coal, but a supply of water was struck which is highly charged with carbonate of soda. The water, by pneumatic action, is intermittently driven out of the bore, and one discharge frequently continues for several hours. *See* G.S.Q.P. 155.

—— —— Artesian Bores. *See under* Artesian Bores. No. 66. *See also under* Coal Bores.

—— Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3761.

Mariner's Reef, Black Snake Goldfield. *Min.Ref.* Copper Pyrites, *see* 2318; Galena, 3069; Gold, 4389; Mispickel, 6807; Pyrrhotite, 7164; Redruthite, 7305; Silver, 7536; Stibnite, 7653.

Marion Cr. (nr. beach, 3 miles N. of), S. of Mackay. *Min.Ref.* Chrysocolla, *see* 1536; Copper carbonate, 1958.

—— Downs Run Sub-artesian Bores. *See under* Artesian Bores. No. 333.

Marjorie M.L. (31), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235L; Chrysocolla, 1534B; Malachite, 6339O.

Mark Tapley Mine, Mungana. *Min.Ref.* Mispickel, *see* 6703A; Scorodite, 7367A; Wolfram, 7971A.

—— Twain Centre, Croydon Goldfield. *See* Pl. 26. *Includes* Mark Twain, Premier, and Billy Brown Reefs. *Min.Ref.* Galena, *see* 2710B, 2710C; Gold, 3531; Iron Pyrites, 4960; Pyromorphite, 7135.

—— —— Reef, Croydon Goldfield. *Min.Ref.* Galena, *see* 2710C; Gold, 3531; Iron Pyrites, 4961.

—— —— ——, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3750; Stibnite, 7623.

Marks (Edward O.), B.A., etc., ex-Assist. Govt. Geologist.

Geological Survey Publications—

(225.) The Coal Measures of South-East Moreton, 1910.

(234.) The Oaks and Eastern Portion of the Etheridge Goldfields, 1911.

(235.) Records No. 3. (iii.) Coal near Chinchilla. (iv.) Coal with Glossopteris Flora near Hughenden. (v.) Carbonaceous Glossopteris-bearing Strata near Pentland. (vi.) Gold on Mount Emu Plains Station, Hughenden District. (viii.) Prospecting on Cape River Goldfield (1911).

(238.) Outside Mines of the Charters Towers Goldfield (1913).

Queensland Government Mining Journal—

On Prospecting for Coal near Brisbane. In vol. 11, p. 173 (1910).

On Coal, Gravel, and Water, East Moreton. In vol. 11, p. 285 (1910).

On Durham Consols Mine, Etheridge Goldfield. In vol. 11, p. 604 (1910).

On Drainage Proposals, Herberton Deep Lead. In vol. 12, pp. 212-214 (1911).

Bompa Silver-Lead Mines. Vol. 12, p. 405 (1911).

Prospects of Coal at Esk. Vol. 13, p. 322 (1912).

Tannymorel Coal Mine. Vol. 13, p. 485 (1912).

Bompa Silver-Lead Mines. Vol. 13, p. 522 (1912).

Tin Discoveries at Redrock, near Ballandean. Vol. 13, p. 539 (1912).

Kangaroo Hills. Vol. 14, p. 60 (1913).

Tally-Ho Mine, Mackay District. Vol. 14, p. 241 (1913).

Supplementary Reports. *See* List *under* separate heading, Nos. 132, 141, 142, 151.

Marlborough, 60 miles N.W. of Rockhampton. *Min.Ref.* Chrysoprase, *see* 1389.

Marmor, 42 miles (by rail) W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Min.Ref.* Limestone (crinoidal), *see* 732.

Geological Note: The rocks in this locality comprise shales and limestones belonging to the Devonian System, the latter being extensively worked for flux near the Marmor Railway Station by the Mount Morgan Company.

Marodian Goldfield—

Situation: *See maps*, Pls. 4, 5. On Running Cr., 8 miles N. of Kilkivan Rail. Stn., 56 miles (by rail and road) N.W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. Centre about *Lat.* 25° 55′ S.; *Long.* 152° 20′ E.

Discovery: Gold found on Colo Flats in 1367.

Proclamation of Field: First (and only one) gazetted, 20th November, 1896, as follows:—Commencing on the north bank of Running Creek at the south-west corner of 21v; thence north along the west boundaries of 21v, 20v, 19v, 18v; thence east along the north boundary of 18v; thence north along the west boundary of 14v; thence east along the north boundaries of 14v, 13v, and 10v; thence north along the west boundary of Selection No. 1129; thence east along the north boundary of No. 1129; thence south along the east boundary of No. 1129 to Yorkey's Creek; thence along the north bank of Yorkey's Creek east to the south-west corner of 4v; thence north along the west boundaries of 4v and 3v; thence west along the south boundary of Selection No. 1682; thence north along the west boundary of No. 1682; thence west along the south boundaries of Selections Nos. 1359 and 864; thence south along the eastern boundary of 59v; thence west along the south boundary of 59v; thence northerly along the west boundary of 59v to the south-west corner of Selection No. 355; thence by a line bearing south-west for about 5½ miles to the watershed of Wide Bay and Burnett districts; thence along that watershed in a south direction about 4 miles; thence east along the south watershed of Running Creek for about 3½ miles; thence north to the south-east corner of Selection 844; thence west along the south boundary and north along the west boundary and east along the north boundary of Selection 844 to Running Creek; thence east along the north bank to that creek to the point of commencement.

Area: 15,360 acres (24 sq. miles).

Leases: Miners' Homesteads in force, 4; area, 90 acres (1912).

Principal Mining Centres: Colo Gold Mines, Mudloo Copper Mines.

Mineral Statistics: *Included in* "Other Goldfields" *in tables and diagram*, Pls. 36, 46, 46A, 47.

Mineral References: Gold (alluvial), *see* 3407, 3408, (reef) 4407, 4408; Copper (Azurite), 254A, 255, (Cuprite) 2485, (Malachite) 6382, 6383, (Redruthite) 7309, (Tetrahedrite) 7781, 7782; Manganese-dioxide, 6491, 6492; Iron (Hematite), 4804A. Other Minerals: Epidote, 2608.

Geological Note: The rocks of this field consist of slates, schists, and quartzites of Gympie Formation (Permo-Carboniferous), associated with masses of granite and diorite. Dykes of felsite, porphyrite, rhyolite, and diorite are present in the granite, and quartz reefs occur in the diorite and in adjoining slates.

Geological Publications: No.—179 (1902). *See under* Geol. Surv. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Gympie.

—— Main and Leader, Norton Goldfield. *Min.Ref.* Gold, *see* 4281.

—— (Par. of) (Por. 167), 17 miles N. of Kilkivan. *Min.Ref.* Bornite, *see* 436; Garnet, 3147; Wollastonite, 8049.

—— Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4282; Iron Pyrites, 5381; Silver, 7526; Zinc Blende, 8197.

Marquis Reef, Normanby Goldfield. *Min.Ref.* Copper carbonate, *see* 1942; Copper Pyrites, 2260; Gold, 4130.

Marraba (Duck Creek), Cloncurry. *See* Pl. 23.

Marsh Co. Darling Downs Dist. *See map*, Pl. 12.

—— Bros.' Sub-artesian Bore. *See under* Artesian Bores. No. 171.

Marsh's Selection Sub-artesian Bore. *See under* Artesian Bores. No. 442.

Marshall Block Lease, Mt. Cannindah. *Min.Ref.* Azurite, *see* 182; Cuprite, 2422; Malachite, 6207.

Marshall's Queen G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2891; Gold, 3912; Iron Pyrites, 5178.

Martin Creek Mining Centre, Cloncurry. *Includes* Mt. McCabe and Mt. Leviathan Group of Copper Mines. *Min.Ref.* Gold, *see* 3468; Iron Pyrites, 4932.

Martin's Mine, Barmundoo Goldfield. *Min.Ref.* Gold, *see* 4237.

—— Reef, Bee Cr. Diggings. *Min.Ref.* Galena, *see* 3006; Gold, 4097.

—— ——, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4049; Mispickel, 6749.

—— ——, Norton Goldfield. *Min.Ref.* Gold, *see* 4283.

Mary Claim, Charters Towers Goldfield. *Min.Ref.* Calcite, *see* 496A; Scolecite, 7359.

—— Cr., br. of Eel Cr., 10 miles S.W. of Gympie. *Min.Ref.* Manganese-dioxide, *see* 6493.

—— Douglas Hill, Top Camp Diggings, Cloncurry. *Min.Ref.* Bismuth (native), *see* 324; Bismuthite, 377; Gold (alluvial), 3179, (nugget) 3435, 3436; Hematite, 4689.

—— Florence Mine, Blackfellow's Gully, Morinish Goldfield. *Min.Ref.* Copper Pyrites, *see* 2297; Galena, 3061; Gold, 4335; Iron Pyrites, 5407; Zinc Blende, 8204.

—— Lou Mine, 3 miles S.W. of Charters Towers. *Min.Ref.* Arsenic, *see* 99A; Gold, 3977A.

—— and Rainbow Mine, Charters Towers. *Min.Ref.* Galena, *see* 2892; Gold, 3913; Iron Pyrites, 5179.

—— River (Brooya Cr.), 20 miles N.W. of Gympie. *Min.Ref.* Gold (alluvial), *see* 3409.

Maryborough—

Situation: *See maps*, Pls. 4, 5. The town is 167 miles (by rail) N.byW. of Brisbane. *Lat.*, 25° 32′ S.; *Long.*, 145° 45′ E. *Co.* March; *Dist.* Wide Bay. Town established in 1851.

Port for the Wide Bay and Burnett Districts; commands the Goldfields of Paradise, Chowey Cr., Eidsvold, and St. John's Cr.; the Mineral Fields of Mt. Shamrock, Marodian, and Kilkivan; the Black Snake Gold and Cobalt Workings; the Auburn Falls and Dykehead Gold Mines; the Young Australian Copper Mine; Yorkey's Gold Workings; the Mt. Biggenden Gold and Bismuth Mines; the Commonwealth Copper Mine; the Calgoa, Teebar, and Munna Copper Mines; and the Burrum Coalfield. The settlement of Maryborough first took place in February, 1851.

Harbourage: The Outer Harbour can be reached from the north (Hervey Bay) and also from the south (Wide Bay), the depth of the bar in the South Channel being 14 ft. 6 in. at L.W.O.S.T. Rise of tides at the Mary River Heads is from 7 ft. to 10 ft. Depth of river at low water varies from 9 ft. 6 in. to 12 ft. Depth at wharves at L.W.S. varies from 7 ft. 6 in. to 21 ft. Burrum River, tapping the Burrum Coal Mines at 20 miles from the entrance, is only available for vessels of shallow draught.

Population: 11,612 (Census 1911).

Rainfall: Yearly av. (1902-1907), 42·42 inches. Wet Days (1902-1907), 101.

Geological Note: The rocks in this locality comprise sandstones, shales, and other rocks belonging to the Burrum Coal Measures, having at their base a group of fine-grained marine sandstones called the "Maryborough Beds," the whole forming a series equivalent to the "Rolling Downs" of Western Queensland.

Chamber of Commerce: Sec., A. McWatters.

Technical College: For mining subjects taught *see under* "Technical Colleges."

General Information: Consult *Pugh's Almanac; Queensland Post Office Directory; Queensland Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Local Newspapers: *Wide Bay and Burnett News*; *Maryborough Chronicle.*

—— and Burrum Coal Co.'s Bores. *See* Colton Bores *under* Coal Bores.

Maryborough Coal Measures and Marine Beds. *See under* Supplementary Reports, No. 133.

Maryland Cr., 9 miles W. of Stanthorpe. *Min.Ref.* Cassiterite, *see* 992.

Maryvale (Goomburra). About 19 miles (by rail) S.W. of Warwick. *Min.Ref* Coal, *see* 1633A.

Mascotte M.C. (319), Cloncurry. *Min.Ref.* Calcite, *see* 458; Copper Pyrites, 2086, 2087; Cuprite, 2402; Ironstone, 5490; Malachite, 6129; Redruthite, 7233; Tile Ore, 2515.

—— Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6945, 6946A.

Mason's Claim, Black Ridge, Clermont. *Min.Ref.* Coal Bands, *see* 1662; Epsomite, 2616; Gold (alluvial), 3303.

Massicot. *Syn.* Lead Ochre. *Compo.*, Oxide of lead. *Colour and Streak*, yellowish. *H.* = 2. *Sp.gr.* = 8. *Contents* (*max.*), Lead 92 per cent.

6516. ——. *Assoc.with* Silver, Native Copper, Cuprite, Tenorite, Antimony, Copper carbonate, and Graphite, in calcite, and in siliceous and talcose shales. *Loc.* Dugald Mine, Dugald R., 40 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 3 (1885).

6517. ——. *Assoc.with* Gold, Galena, Anglesite, and Ironstone, in quartz. *Loc.* Ace of Hearts Reef, Tabletop, 9 miles N.N.E. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 35 (1896).

6518. ——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* Comet Reef, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

6519. ——. *Assoc.with* Gold, in quartz. *Loc.* Glencoe and Independence Reefs, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, pp. 37, 38 (1896), and G.S.M.

6520. ——. *Assoc.with* Gold, Pyromorphite, and Anglesite, in quartz. *Loc.* Hope Reef, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

6521. ——. *Assoc.with* Gold and Pyromorphite, in quartz. *Loc.* Mt. Morgan Reef, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 35 (1896), and G.S.M.

6521A. ——. *Assoc.with* Gold, Galena, and Cerussite, in lode. *Loc.* Boulder Hill, Broken Hill, and Granite Castle Silver-Lead Lodes, Por. 2, Par. of Cracknell, Flinders R., Mt. Emu Plains Stn., 62 miles N.N.E. of Hughenden, 55 miles N.W.byW. of Pentland Rail. Stn. (Gt. Northern line). *Co.* Wongalee; *Dist.* Burke. *Ref.* (and *Assays*) Q.G.M.J., vol. 11, p. 136 (1910).

6521B. ——. *Assoc.with* Gold, in quartz. *Loc.* Cargoon Holding, 2½ miles from Deccan Mine, Mt. Emu Plains Stn (*ante*). *Assay:* Gold = 88 oz.; Silver = 37 oz. *Ref.* A.R., p. 215 (1910).

6522. ——. Allendale Silver Mine, Chowey Cr., 6 miles N.W. of Chowey Rail. Stn. (Gayndah line), 68 miles (by rail and road) W. of Maryborough. *Co.* Bowen; *Dist.* **Burnett.** *Assay: See* No. 3567. *Ref.* G.S.M.

6523. ——. Between Degilbo and Stanton-Harcourt Runs, about 3 miles W.byN. of Maryborough. *Co.* Bowen (*ante*). *Ref.* G.S.M.

6523A. ——. *Assoc.with* Galena, Cerussite, Anglesite, Malachite, Azurite, and Limonite, in lode. *Loc.* about 5 miles S. of Coalstoun Lake, 16 miles S.W. of Biggenden Rail. Stn. (Gayndah line). *Co.* Mackenzie; *Dist.* Burnett. *Ref.* A.R., pp. 287, 288, 291 (1910).

6524. ——. *Assoc.with* Argentiferous Galena. *Loc.* St. John's Cr. Goldfield, Burnett R., 16 miles S.W. of Eidsvold. *Co.* Wicklow; *Dist.* Burnett.

6525. ——. *Assoc.with* Galena and Mispickel, in quartz. *Loc.* Ebagoola, Hamilton Goldfield, 33 miles W. of Port Stewart, 173 miles N.W.byW. of Cooktown. *Co.* Coen; *Dist.* **Cook.** *Ref.* O.R.

6525A. ——. *Assoc.with* Anglesite, Cerussite, and Malachite, in lode. *Loc.* Popahrairie P.A., Fiery Cr., about 15 miles N.byW. of Georgetown, Etheridge Goldfield. *Co.* Einasleigh; *Dist.* Cook. *Ref.* A.R., p. 194 (1909).

6525B. ——. *Assoc.with* Gold, Galena, Cerussite, and Malachite, in quartz and schist. *Loc.* Ancient Briton Mine, Georgetown, 20 miles N. of Charleston Rail. Stn., Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* A.R., p. 215 (1910).

6525C. ——. *Assoc.with* Silver, Galena, and Limonite, in quartz. *Loc.* M.L. (64), Mosquito Cr., about 10 miles S.W.byS. of Charleston Rail. Stn. (Etheridge line). *Co.* Gilbert (*ante*). *Assay: See* No. 2756B. *Ref.* A.R., p. 368 (1910).

6525D. ——. *Assoc.with* Gold, Silver, Galena, Anglesite, and Cerussite, in lode. *Loc.* 1 mile N. of International Mine, Rocky, 6 miles S.W.byS. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Assays: See* No. 2757A. *Ref.* A.R., p. 228 (1910).

6526. ——. *Assoc.with* Anglesite, Cerussite, Galena, Actinolite, and Manganese-dioxide. *Loc.* Macrossan Mine, between Cathedral Range and Arbinjoe Cr., 2 miles E. of Chillagoe Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay: See* No. 28. *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

6526A. ——. *Assoc.with* Galena and Cerussite. *Loc.* Dolly Brand Mine, 1 mile from Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Assay: See* No. 2790A. *Ref.* A.R., p. 318 (1911).

6527. ——. *Assoc.with* Galena, Anglesite, and Cerussite, in talcose iron gossan. *Loc.* Ewan and Delaney's P.A., Dargalong, 7 miles S. of Mungana Rail. Stn. (Etheridge line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

6528. ——. *Assoc.with* Anglesite, in ferruginous gossan. *Loc.* P.A. (29), Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

6529. ——. *Assoc.with* Galena, Minium, Anglesite, Cerussite, and Copper carbonate, in gossan. *Loc.* Pandora Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 69 (1891).

6530. ——. In clay. Comstock Mine, Lappa Junction, 102 miles (by rail) S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

6530A.——. *Assoc.with* Cerussite, Galena, Iron Pyrites, Mispickel, and Zinc Blende, in lode. *Loc.* Chillagoe Mine, off Wise's Knob, Oaks Goldfield, 30 miles (by road) S. of Einasleigh Rail. Stn. *Co.* Percy; *Dist.* Cook. *Ref.* A.R., p. 187 (1909).

6531. ——. *Assoc.with* Anglesite. *Loc.* Nr. Palmer R., br. of Mitchell R., Palmer Goldfield. *Dist.* Cook. *Ref.* O.R.

6532. ——. *Assoc.with* Silver, Anglesite, and Galena. *Loc.* Silver Wave Claim, Stanthorpe, 38 miles (by rail) S. of Warwick. *Co.* Bentinck; *Dist.* **Darling Downs.**. *Ref.* G.S.Q. Pub. 125, p. 30 (1897).

6533. ——. *Assoc.with* Galena, Cerussite, and Linarite, in slate. *Loc.* Caledonia Mine, Dry R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

6534. ——. *Assoc.with* Galena, Minium, Anglesite, Chalcanthite, and Linarite, in slate. *Loc.* John Bull Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

6535. ——. *Assoc.with* Galena, Cerussite, Copper carbonate, and Ironstone, in quartz and gossan. *Loc.* Silver Streak Mine, Dr. R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

6536. ——. *Assoc.with* Galena and Cerussite, in lode. *Loc.* Target Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

6537. ——. *Assoc.with* Cerussite and Galena. *Loc.* White Star Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

6537A.——. *Assoc.with* Gold, Silver, Anglesite, and Cerussite, in lode. *Loc.* Nr. Bluff Stn., 9 miles S.E. of Mt. Leyshon, 22 miles S.S.E. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* A.R., p. 260 (1910).

6537B.——. *Assoc.with* Gold, Silver, Galena, Anglesite, and Cerussite, in lode. *Loc.* Right-hand br. of One-mile Gully, 1½ miles S.E. of Mt. Leyshon. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

6538. ——. *Assoc.with* Silver, Gold, and Galena. *Loc.* Comstock Silver Mine, 3½ miles S.E.of byS. of Ravenswood Rail. Stn. *Co.* Gladstone; *Dist.* Kennedy North. *Contents:* Lead = 14½ per cent.; Silver = 19 oz. per ton; Gold = 1 oz. 13 dwt. per ton. *Ref.* G.S.Q. Pub. 125, p. 34 (1897), and G.S.M.

6538A.——. *Assoc.with* Galena. *Loc.* Cardigan Stn., S. side of Burdekin R., 19 miles S.W. of Ravenswood. *Co.* Murray; *Dist.* Kennedy North. *Ref.* A.R., p. 306 (1911).

6539. ——. *Loc.* Alpha Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction (Northern line). *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.M.

6540. ——. *Assoc.with* Minium, Anglesite, Cerussite, and Ironstone. *Loc.* Bonanza Silver Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q Pub. 26, p. 4 (1886).

6541. ——. *Assoc.with* Anglesite. *Loc.* Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.M.

6542. ——. *Assoc.with* Galena, Minium, Cerussite, and Ironstone, in quartz. *Loc.* John Bull Silver-Lead Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay: See* No. 2986. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

6543. ——. *Assoc.with* Anglesite, Minium, Cerussite, Galena, and Ironstone, in ferruginous gossan. *Loc.* Washington 1 and 2 Mines, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.M.

6544. ——. *Assoc.with* Iron Pyrites, Galena, Mispickel, Bismite, and Chlorite. *Loc.* Blackbutt, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* O.R.

6545. ——. *Assoc.with* Iron Pyrites, Cerussite, Mispickel, Scorodite, and Wolfram. *Loc.* Plant's Leasehold, 4 miles E. of Crow's Nest Rail. Stn., 38 miles (by rail and road) N.N.E. of Toowoomba. *Co.* Cavendish (*ante*). *Ref.* A.R., pp. 148, 149 (1908).

6546. Massicot. *Assoc.with* Gold, Galena, and Zinc Blende, in gossany quartz. *Loc.* Iceberg P.A., Mt. Langan, Emu Cr., 14½ miles W.N.W. of Kannungar Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 467 (1906).

6547. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Anglesite, Galena, Mispickel, and Limonite, in gossan and slate. *Loc.* Silver Knob P.A., Mt. Langan (*ante*). *Assay:* *See* No. 3033. *Ref.* Q.G.M.J., vol. 7, p. 467 (1906).

6548. ——. *Assoc.with* Gold, Iron Pyrites, Cassiterite, Cerussite, Bismuth, and Calcite, in kaolinised greisen. *Loc.* Snowdrop P.A., Mt. Langan (*ante*). *Ref.* Q.G.M.J., vol. 7, p. 467 (1906).

6549. ——. *Assoc.with* Gold, Silver, Galena, Anglesite, Minium, Cerussite, Hematite, and Limonite, in lode. *Loc.* Bompa Silver-Lead Mine, 2 miles W.byS. of Littlemore Rail. Stn. (Boyne Valley line), 53 miles (by rail and road) S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 159, p. 7 (1901).

Matheison's Sel., Dawson R. Coalfield. *Min.Ref.* Kerosene Shale, *see* 5713.

Matilda (Byles's) Antimony Lease, Northcote, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3758; Stibnite, 7621.

Matlockite. *Compo.*, Oxy-chloride of lead. *Colour,* yellowish. Transparent. Glassy. *H.* = 2·5-3; *Sp.gr.* = 7·2.

6550. —— (?). Alpha Silver Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction (Northern line), 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* **Kennedy North.** *Ref.* G.S.M.

Matrix Opal. A variety of opal in which veins and flashes of precious opal are contained in a matrix of brownish-red ironstone. It commonly forms the covering of precious opal, and is sometimes incorrectly termed "black opal." *See also under* Opal.

Mat's Hard Opal Mine, Keeroongooloo Run. *Min.Ref.* Precious Opal, *see* 6946.

Matthews' Bore. *See under* Artesian Bores. No. 156.

Maud and Mary Mine, Walsh R. *Min.Ref.* Cassiterite, *see* 879.

Mavis M.L. (315), Cloncurry. *Min.Ref.* Azurite, *see* 152; Biotite, 301; Calcite, 448; Chlorite, 1418; Ironstone, 5480; Ilmenite, 4880; Malachite, 6073; Redruthite, 7204.

Maxwell's Sub-artesian Bore. *See under* Artesian Bores. No. 244.

Maxwelton Stn., on Alick Cr., W. of Richmond. *Min.Ref.* Barytes, *see* 264.

Maxwelton Goldfield—

Situation: *See maps,* Pls. 2, 3, 34. The field is about 35½ miles S.W. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. Centre about *Lat.* 20° 47′ S.; *Long.* 142° 42′ E.

Proclamation of Field: First gazetted, 15th December, 1891; last alteration, 5th May, 1897, as follows:—Commencing at a point 40 chains south from the western extremity of the northern boundary line of portion No. 1v., Galloway Plains, being the south-west corner of Galloway Plains Lease; and bounded thence, on the north-east by a line bearing 135 degrees 2 miles; on the south-east by a line bearing 225 degrees 1 mile; on the south-west by a line bearing 315 degrees 2 miles; and on the north-west by a line bearing 45 degrees 1 mile, to the point of commencement.

Area: 1280 acres (2 sq. miles).

Mineral Statistics: *included in* "Other Goldfields" *in tables and diagram,* Pls. 36, 46, 46a, 47.

Mineral References: Gold, *see* 4261; Copper (Azurite), 244, (Malachite), 6355; Molybdenite, 6862, 6863.

Geological Note: The country rock is granite.

Geological Publications: *Nil.*

Warden: Stationed at Gladstone; Inspector of Mines: Stationed at Rockhampton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— (5 miles from), S.W. of Gladstone. *Min.Ref.* Altaite, *see* 2; Cerussite, 1298; Pyromorphite, 7150.

—— Run Bores. *See under* Artesian Bores. Nos. 334, 335.

Mayday Bore. *See under* Artesian Bores. No. 269.

May Belle Reef, Twelve-mile, Croydon Goldfield. *Min.Ref.* Gold, *see* 3557.

—— Day Reef, Belmore Cr., Croydon Goldfield. *Min.Ref.* Gold, *see* 3476.

—— Graham P.A., Cloncurry. *Min.Ref.* Native Copper, *see* 1980B; Copper Pyrites, 2090A; Cuprite, 2407A; Molybdenite, 6814A; Redruthite, 7241A.

—— Queen Reef, Brovinia Cr. Goldfield. *Min.Ref.* Cassiterite, *see* 773; Gold, 3633.

—— ——, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3706; Graphite, 4590.

Maybelle Mine, Newellton (Silver Valley). *Min.Ref.* Azurite, *see* 214.

Mayer's Reef, Horse Cr., 38 miles N.W. of Coen. *Min.Ref.* Gold, *see* 3660A.

Mayfair Bore. *See under* Artesian Bores. No. 292.

Mayfield Bores. *See under* Artesian Bores Nos. 221, 234.

Mayne Co. Gregory North Dist. *See map*, Pl. 20.

—— Cr., br. of Diamantina R. *Min.Ref.* Gypsum, *see* 4623; Kaolin, 5685.

Mayri (Launoka Doudou) Bay, Brit. New Guinea. *Min.Ref.* Limestone, *see* 704.

May's Reef, Canoona Goldfield. *Min.Ref.* Gold, *see* 4315A; Iron Pyrites, 5398A.

Maytown, Palmer Goldfield. *Lat.*, 15° 59′ S.; *Long.*, 144° 20′ E. *Min.Ref.* Cassiterite, *see* 834; Cuprite, 2426; Gold (alluvial) 3206, (reef) 3678-3682; Malachite, 6212; Ruby, 2358; Rutile, 7326; Tile Ore, 2545. *See also under* Govt. Ming. Jour., Special Reports No. 28. *See under* Palmer G.F. for geological note. *See under* Supplementary Report List, No. 57, for further details.

McCallum's (Waniola) Bore. *See under* Artesian Bores. No. 528.

McCaughey's Bore. *See under* Artesian Bores. No. 425.

McConnel (D.C.) Sub-artesian Bore. *See under* Artesian Bores. No. 232.

McCord's Cr., 5 miles N.N.W. of Fisherton. *Min.Ref.* Cassiterite, *see* 950; Bismutite, 395; Wolfram, 7971.

McColl's Just-in-Time P.C., Charters Towers Goldfield. *Min.Ref.* Gold, *see* 3914; Ironstone, 5549.

McCormack's (Rosevale) Bore. *See under* Artesian Bores. No. 415.

McDonald's Flat, Clermont Goldfield. *Min.Ref.* Coal, *see* 1672; Gold (alluvial) 3323, 3324, (nugget) 3441B, (reef) 4163-4166; Ironstone, 5596; Limonite, 5889; Marcasite, 6513.

McDougall's Head Station (Birralee), Bowen R. *Min.Ref.* Calcite, *see* 509; Copper carbonate, 1948.

McEuen Parish Sub-artesian Bores. *See under* Artesian Bores. No. 34.

McEwen's (Galah Cr.) Sub-artesian Bore. *See under* Artesian Bores. No. 293.

McFadden's (or Paddy's) Lode, Dry R. Mines. *Min.Ref.* Galena, *see* 2852; Malachite, 6280.

McFadgen's Mine, Denham Range, S.W. of Mackay. *Min.Ref.* Coal, *see* 1680.

McFayden's Lead, "The Springs," Clermont. *Min.Ref.* Gold (alluvial), *see* 3344.

McGeorge Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

McIlwraith Lease, Red Cap Cr., nr. Mungana. *Min.Ref.* Chrysocolla, *see* 1520; Copper Ore, 2032; Limestone, 640; Lithomarge, 5709; Malachite, 6240; Silver, 7465.

McIvor River, N.N.E. of Cooktown. *Min.Ref.* Cervantite, *see* 1302, 1303; Gold (alluvial), 3201; Stibnite, 7613-7615.

McIvor's Sel., Cadarga. *Min.Ref.* Manganese-dioxide, *see* 6401.

McKenzie's (Westhill) Bore. *See under* Artesian Bores. No. 266.

McKenzie and Sutherland's (Skeleton Cr.) Bore. *See under* Artesian Bores. No. 293.

McKinlay, S.E.byE. of Cloncurry. *Lat.*, 21° 15′ S.; *Long.*, 141° 25′ E. *Min.Ref.* Copper Pyrites, *see* 2060; Iron Pyrites, 4917; Limonite, 5739, 5740; Redruthite, 7201.

—— (45 miles N.W. of), S.E.byE. of Cloncurry. *Min.Ref.* Kyanite, *see* 5715; Muscovite, 6883.

—— Bore. *See under* Artesian Bores. No. 35.

McKinlay Co. Warrego Dist. *See map*, Pl. 18.

—— Ranges, S.E.byE. of Cloncurry. *Lat.*, 21° 40′ S.; *Long.*, 141° E. *Min.Ref.* Magnetite, *see* 5970.

—— River, N. of McKinlay. *Min.Ref.* Hematite, *see* 4670.

McKonkey Cr. Antimony Mine, Hungry Hill, 16 miles S.W. of Eidsvold. *Min.Ref.* Stibnite, *see* 7608.

Geological Note: The country rock is granite, with slates, quartzites, and limestones about two miles away. The antimony lode is several feet thick, and is made up of a granite formation containing quartz and stibnite. *See* G.S.Q. Pub. 160 for details.

McKonkey's Cr. Diggings, "The Springs," S.W. of Eidsvold. *Min.Ref.* Gold (alluvial), *see* 3200.

Geological Note: This is a gold-bearing "lead" in granite country. The wash is clayey, and in places ferruginous, a hard white cement forming the cover. *See* G.S.Q. Pub. 160 for details.

McLachlin's (Westcour) Bore. *See under* Artesian Bores. No. 155.

McLennan's Grazing Farm, 16 miles from Isisford. *Min.Ref.* Coal, *see* 1709.

McLeod (W. A.), B.A.—

Costs, Methods, and Record—As applied to Small and Medium-sized Mines. Q.G.M.J., vol. 8, p. 233 (1907).

McLeod's Gully (Sel. 451 W.), nr. Sugarloaf Mt., Stanthorpe. *Min.Ref.* Wolfram, *see* 8001.

McLeodsville, Hodgkinson Goldfield. *Min.Ref.* Copper Pyrites, *see* 2142; Galena, 2742; Gold, 3713, 3714; Hematite, 4706; Iron Pyrites, 5034, 5035.

McMahon Tin Lode, Sandy Cr. Tin Mines. *Min.Ref.* Cassiterite, *see* 1151A.

McMaster's (Top Camp), Clermont Goldfield. *Note:* Gold discovered here in 1864. *Min.Ref.* Epsomite, *see* 2617; Gold (alluvial), 3277-3281; Iron Pyrites, 5316; Ironstone, 5589; Magnesite, 5948, 5949; Marcasite, 6515; Psilomelane, 7091.

Geological Note: *See* remarks *under* Black Ridge.

McMaster Bros.' Sub-artesian Bores. *See under* Artesian Bores. Nos. 249, 344.

McNiel (D.) (Millie Station) Bores. *See under* Artesian Bores. No. 277.

McPhail Group of Copper Mines, Florence R., Cloncurry. *Includes* McPhail M.L., Trump Extd. M.C., Talk o' the Hills Extd. M.C., Dandy P.A., Erin-go-bragh Extd. M.C.

Mineral References: Azurite, *see* 163; Calcite, 459; Chrysocolla, 1504, 1505; Native Copper, 1980; Copper Pyrites, 2088, 2089; Cuprite, 2406; Cyanochalcite, 1537A; Dioptase, 2582; Ferro-Calcite, 572; Iron Pyrites, 4926; Limonite, 5776-5779; Malachite, 6135-6138; Redruthite, 7237-7240.

—— M.L. (474), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1504; Copper Pyrites, 2089; Limonite, 5778; Malachite, 6137; Redruthite, 7239.

McPhee's Sel., Mountain Camp, Enoggera. *Min.Ref.* Iron Pyrites, *see* 5343; Zinc Blende, 8177.

McQueen's P.A. (19), Jordan Goldfield. *Min.Ref.* Gold, *see* 3772.

McRitchie's Wolfram Mine ($\frac{1}{2}$-mile from), 8$\frac{1}{2}$ miles from Rosedale. *Min.Ref.* *See under* Rosedale Mineral Field.

Meadow (The) Bore. *See under* Artesian Bores. No. 142.

—— Flats, N. side of Fitzroy R., nr. Rockhampton. *Min.Ref.* Chromite, *see* 1484.

Meadowland Bore. *See under* Artesian Bores. No. 160.

Meatworks (Westbourne) Bore. *See under* Artesian Bores. No. 155.

Meerschaum Mountain, 12 miles S.W.byS. of Nerang. *Min.Ref.* Tripolite, *see* 7031.

Mekeo (St. Joseph), Brit. New Guinea. *Min.Ref.* Felspar, *see* 2649A; Gold (alluvial), 3425; Magnetite, 6065; Olivine (?), 6933.

Melaconite. *Syn.* Tenorite, *which see.*

Melanite. *Sub-var. of* Andradite, Garnet Group, *which see.*

Melanterite. *Syn.* Copperas, *which see.*

Melba Group of Copper Mines, Corella R., Cloncurry. *Includes* Melba and Rising Sun M. Leases. *Min.Ref.* Actinolite, *see* 4849A; Copper Pyrites, 2061A; Limonite, 5744A; Malachite, 6074A; Redruthite, 7204A.

—— M.L. (319), Cloncurry. *Min.Ref.* Actinolite, *see* 4849A; Copper Pyrites, 2061A; Limonite, 5744A; Malachite, 6074A; Redruthite, 7204A.

Melbourne Exhibition Reef, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3733.

Mellor and Elworthy's Stn., Imbil, S. of Gympie. *Min.Ref.* Copper Pyrites, *see* 2325; Galena, 3075; Iron Pyrites, 5446; Zinc Blende, 8210.

Melrose (Magoffin's) Bore. *See under* Artesian Bores. No. 443.

Melton Bore. *See under* Artesian Bores. No. 387.

Melville Co. Cook Dist. *See map,* Pl. 8.

Menaccanite. *Syn.* Ilmenite, *which see.*

Mended Hill Mine, Lawn Hills. *Min.Ref.* Cerussite, *see* 1186; Galena, 2692, 2697; Lead-bearing Gossan, 5728; Zinc Blende, 8052.

Merani, Cloudy Bay, Brit. New Guinea. *Min.Ref.* Cinnabar, *see* 1566.

Mercer and party's Lease (32), Clermont Coalfield. *Min.Ref.* Coal, *see* 1671.

Mercury (Hg.). *Atom.wt.,* 200·6. *Sp.gr.,* 14·93. *Colour,* bright-white-metallic. Liquid at ordinary temperatures.

USES: Mercury is chiefly used as a metallurgical reagent in the extraction of free gold from quartz and other gangues. It is also used in the manufacture of medicines, pigments, chemical reagents, explosives, dyeing and calico printing, and in mercurial thermometers and barometers. It forms amalgams with tin, zinc, gold, silver, sodium, etc., for which there is a variety of uses, the tin amalgam being commonly used in the process of "silvering" mirrors. Cinnabar, the principle ore of mercury, is used as a red pigment.

MINERALS: *See* Native Mercury, Cinnabar.

MINERAL AND GEOLOGICAL NOTE: Bornite, Copper Pyrites, Gold, Iron Ores, Limestone, Oxidised Copper Ores, and Redruthite are associated minerals. The gangues are usually calcite, quartz, and ironstone in lode formations. Small isolated patches of Cinnabar have been found in the Mt. Perry Copper Mines, but only in the Kilkivan District have deposits of any extent been worked. Many of the reported deposits of native mercury have only been the accumulations of the metal in water-courses where gold washing or crushing machines, using mercury to catch the gold, have once been in operation.

VALUES: *See* Table under Metal Values in London for maximum and minimum prices for all years since 1892.

DISCOVERIES: About 1872 at Mt. Perry, about 1876 at Kilkivan.

6551. Mercury. *Assoc.with* Gold, in quartz reef. *Loc.* Duffer Diggings, Gobongo Cr., Black Snake, 16 miles S.E. of Kilkivan. *Co.* Fitzroy; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 28, p. 4 (1886).

Mercury Sulphide. *See* Cinnabar.

Merina Station Sub-artesian Bore. *See under* Artesian Bores. No. 336.

Meringandan (1½ mile N.E. of), 11 miles (by rail) N. of Toowoomba. *Min.Ref.* Corundum, *see* 2369.

—— (Par. of), Por. 27v. *Min.Ref.* Coal, *see* 1623A.

Merivale Co. Darling Downs Dist. *See map,* Pl. 12.

Meriwa Sub-artesian Bores. *See under* Artesian Bores. No. 108.

Merlin Co. Gregory North Dist. *See map,* Pl. 20.

Merry Monarch Reef, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2759; Gold, 3742; Iron Pyrites, 5056.

Mesotype. *Syn.* Natrolite, *which see.*

Messenger's Selection, W.byS. of Kilkivan. *Min.Ref.* Cinnabar, *see* 1557.

—— —— (1 mile E. of), W.byS. of Kilkivan. *Min.Ref.* Calcite, *see* 553; Cinnabar, 1557.

Metallurgical Works. *See* Smelting Works.

Metal Values in London. (Annual Variations) :—

Metal Values in London (Approximate Standard Annual Variations) compiled from Various Sources.

Year.	COPPER.		TIN.		LEAD.		SILVER.		SPELTER.		ALUMINIUM.		NICKEL.		MERCURY.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	—	—	—	—	Max.	Min.
	Per Ton.		Per Ton.		Per Ton.		Per Oz.		Per Ton.		Per Lb.		Per Lb.		Per Bottle (76 lb.).	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	s. d.	£ s. d.	£ s. d.	s. d.		s. d.		£ s. d.	£ s. d.
1892	47 18 9	43 10 0	103 5 0	88 15 0	11 6 3	9 16 3	3 $7\frac{3}{4}$	3 $1\frac{7}{8}$	22 6 11	18 18 0	2 2·61		1 11·94		?	?
1893	46 16 3	40 12 6	95 10 0	74 0 0	10 7 6	9 2 6	3 $2\frac{3}{4}$	2 $6\frac{1}{2}$	17 19 $3\frac{3}{4}$	16 17 0	2 2·61		1 8·22		6 17 6	6 2 6
1894	43 0 0	37 17 6	74 0 0	60 17 6	10 2 6	9 0 0	2 $7\frac{3}{4}$	2 3	16 5 $9\frac{1}{2}$	14 8 $1\frac{1}{3}$	1 9·29		1 7·15		6 14 0	5 7 0
1895	47 8 9	38 13 9	69 0 0	58 15 0	11 15 0	9 10 0	2 $7\frac{3}{8}$	2 $3\frac{3}{16}$	15 7 2	13 12 11	1 3·96		1 1·84		7 8 6	6 7 6
1896	50 8 9	40 10 0	61 15 0	56 0 0	11 16 3	10 15 0	2 $7\frac{5}{8}$	2 $5\frac{3}{4}$	18 3 6	14 5 11	1 1·84		1 1·30		7 6 0	6 5 6
1897	51 13 9	47 0 0	63 11 3	58 10 0	14 5 0	11 10 0	2 $5\frac{13}{16}$	1 $11\frac{3}{4}$	18 1 6	17 1 6	1 1·30		1 1·30		7 7 6	6 9 6
1898	57 10 0	48 6 3	86 5 0	62 15 0	14 12 6	12 5 0	2 $4\frac{5}{16}$	2 1	24 7 0	18 0 0	0 11·71		1 1·30		7 15 0	6 16 0
1899	79 5 0	57 17 6	151 0 0	87 0 0	17 15 0	13 0 0	2 5	2 $2\frac{5}{8}$	28 10 10	20 3 9	0 11·71		1 1·30		9 12 6	7 15 0
1900	79 15 0	69 0 0	153 0 0	108 5 0	18 0 0	15 17 6	2 $6\frac{3}{16}$	2 3	22 3 8	18 13 8	0 10·64		1 3·96		9 12 6	9 2 6
													Max.	Min.		
													s. d.	s. d.		
1901	73 12 6	47 0 0	140 0 0	97 10 0	16 10 0	10 2 6	2 $5\frac{9}{16}$	2 $0\frac{5}{16}$	18 13 3	16 11 4	0 10·64		1 5·02	1 3·43	9 2 6	8 17 6
											Max.	Min.				
											s. d.	s. d.				
1902	57 0 0	45 2 6	137 5 0	98 0 0	12 0 0	10 0 0	2 $2\frac{1}{4}$	1 $9\frac{9}{16}$	19 15 6	16 13 0	0 11·97	1 1·30	1 1·62	1 3·43	8 17 6	8 14 6
1903	67 10 0	52 10 0	141 10 0	111 10 0	13 17 6	10 17 6	2 $4\frac{1}{2}$	1 $9\frac{11}{16}$	22 18 2	20 0 8	0 11·97	1 1·30	1 7·96	1 3·96	8 15 0	8 5 0
1904	68 15 0	55 0 0	137 0 0	115 15 0	13 3 9	11 5 0	2 $4\frac{9}{16}$	2 $0\frac{7}{16}$	24 17 1	21 11 2	0 11·97	1 1·30	1 7·96	1 3·96	8 5 0	7 14 0
1905	81 0 0	64 0 0	166 5 0	129 5 0	17 17 6	11 17 6	2 $6\frac{5}{16}$	2 $1\frac{5}{16}$	28 14 11	23 11 8	1 5·30	1 7·96	1 7·96	1 3·96	7 15 0	7 1 0
1906	109 10 0	74 0 0	215 0 0	161 0 0	20 2 6	15 7 6	2 $9\frac{1}{8}$	2 5	28 8 2	24 15 3	1 5·30	1 7·96	1 9·29	1 3·96	7 7 6	6 17 0
1907	112 0 0	54 10 0	200 0 0	115 0 0	22 10 0	13 0 0	2 $8\frac{1}{2}$	2 $0\frac{3}{16}$	27 7 1	20 3 3	1 5·30	1 9·29	1 7·96	1 5·02	8 5 0	6 15 0
1908	66 5 0	56 2 6	147 0 0	118 0 0	15 5 0	12 6 3	2 $3\frac{3}{16}$	1 10	21 6 1	18 14 1	0 6·92	0 10·64	1 6·62	1 3·96	8 10 0	7 12 6
1909	61 6 7	56 6 9	149 2 3	127 7 3	13 8 8	12 10 6	2 $0\frac{1}{3}$	1 $11\frac{1}{4}$	23 2 1	21 6 3	0 6·65	0 7·98	1 6·62	1 3·96	9 17 6	7 19 0
1910	61 0 11	54 5 6	173 17 3	147 4 11	13 13 11	12 10 9	2 $1\frac{7}{10}$	1 $11\frac{7}{10}$	24 1 9	22 1 1	0 6·92	0 8.51	1 6·62	1 3·96	9 15 0	8 0 0
1911	61 3 10	54 3 2	207 7 9	180 16 11	15 15 5	12 18 5	2 $1\frac{13}{20}$	2 $0\frac{2}{25}$	27 12 $6\frac{1}{2}$	22 19 2	0 5·58	0 6·65	1 6·62	1 3·96	10 0 0	8 0 0

Meteor M.C. (145), Cloncurry. *Min.Ref.* Malachite, *see* 6110; Redruthite, 7218.

Meteor Downs Run, 20 miles S.E. of Springsure. *Min.Ref.* Coal, *see* 1676A.

Meteorites. Several occurrences of meteorites have been reported, but only four authenticated falls have been recorded.

6551A. Meteorite Thunda Station, 32 miles E.byS. of Windorah, 68 miles W.N.W. of Adavale. *Co.* Thunda; *Dist.* Gregory South. *Lat.*, 25° 15′ S.; *Long.*, 142° 40′ E. *Weight:* Original specimen was one cwt. or more. *Compo.:* "It consists mainly of iron, with nickel [98·85 per cent. nickel-iron], and a trace of cobalt; both sulphur and phosphorus are present, together with some carbon." *Sp.gr.*, 7·77. *Fall,* 1886 *Ref.* A. Liversidge in Proc. Roy. Soc. N.S.W., 1887, vol. 20, p. 73; *also* in Minerals of N.S.W., 1888, p. 221. *Collection:* Mining and Geological Museum, Sydney.

6551B.—— (in two pieces). Mungindie (3 miles north of), near Barwon River, S.E. Queensland. *Co.* Belmore; *Dist.* Maranoa. *Lat.*, 28° 58′ E.; *Long.*, 149° E. *Weight:* The two pieces are 62 and 51 lb. respectively. *Compo.:* Iron, 90·307 per cent.; nickel, 8·230; cobalt, 1·360; phosphorus, ·093; carbon ·010; sulphur, trace. *Sp.gr.*, 7·4. *Ref.* G. W. Card in Rec. Geol. Surv. N.S.W., vol. 5 (1897), p. 121; Dr. H. A. Ward in Amer. Jour. Sci. (1898), ser. 4, vol. 5, p. 138. *Fall,* 1897. *Collections:* Mining and Geological Museum, Sydney; and Ward-Cooney Coll., Chicago.

6551C.——. Rockhampton. Three specimens of stony meteorites fell in this city about May, 1895, each piece being a few lbs. in weight. *Ref.* H. Tryon in Q'land Naturalist, vol. 1, No. 7 (1910), pp. 161-71. One specimen is in the possession of J. S. Edgar, Botanic Gardens, Rockhampton, another one is in the collection of the Rockhampton School of Arts.

6551D.——. "Queensland." Said to have been found in 1894. Uncertain locality in S. Q'land. Weight 72 grammes. Undescribed (Ward). *Fall,* 1894.

6551E.——. Tenham Stones (15). Weights vary from 20 to 5,241 grammes. *Loc.* Tenham Station, junction of Cooper and Kyabra Creeks, Western Queensland. *Lat.* 25° 30′ S.; *Long.* 142° 40′ E. *Compo.:* Mostly silicates, with a few per cent. of nickel-iron. *Sp.gr.*, 3·4. *Fall,* about Feb., 1879, between 2 and 3 o'clock in the morning, and apparently coming from west to east. *Observer,* P. Hammond, of Tenham Station. *Collections:* Geological Survey Museum and Queensland University. *Ref.* B.D.

Mewstone (Moturina) Island, Brit. New Guinea. *Min.Ref.* Limestone, *see* 707.

Mexican Reef, Charters Towers Goldfield. *Min.Ref.* Calcite, *see* 497; Galena, 2892A; Gold, 3960; Iron Pyrites, 5180; Scolecite, 7360.

Mexico Co. Mitchell Dist. *See map,* Pl. 18.

Meyer's Leader, Mareeba Goldfield. *Min.Ref.* Gold, *see* 3773; Hematite, 4721.

—— Sub-artesian Bores. *See under* Artesian Bores. No. 118.

Mia Mia (Par. of), (Por. 83v and 7v, 99v), W.S.W. of Mackay. *Min.Ref.* Azurite, *see* 229A, 229B; Bornite, 429B, 430A; Copper Pyrites, 2253A, 2253B; Malachite, 6325A-6325C.

Mica. *Sp.gr.* 2·7-3·1. *H.* 2·5. *Compo.*, variable silicates of alumina with potash, soda, magnesia, lime, iron, and lithia.

VARIETIES: *See* Biotite, Lepidolite, Muscovite, Chalcolite, Vermiculite.

USES: Mica is commonly used for glazing windows in furnaces and stoves, as a substitute for glass in lamp chimneys, and as insulators in electrical work, also being used in making lubricants and paints. For windows, insulators, and indeed for most other purposes, Muscovite is preferred, Biotite and other dark-coloured micas, for various reasons, not being suitable. The general utility of Muscovite depends on its easy cleavage, softness, flexibility, absence of colour, and the size of the cleavage sheets, the minimum of which for market purposes must not be less than three square inches. Scrap mica is greatly in demand for heat insulation, and large quantities of this scrap, when ground to a coarse powder, are used in the colouring of paper for wall decoration, in the manufacture of roofing and fireproof paints, and for boiler-covering and packing. When finely ground it is used as an absorbent for nitro-glycerine in making dynamite

Mica—*continued*:

and other explosives, and as a lubricant for the bearings of heavy machinery. A special use for the very finest sheet mica, and for which only Indian mica is applicable, is in the making of sounding-diaphrams for phonographs, and large quantities of mica are now being used for this purpose. Canadian amber mica and Indian Lepidolite are used specially for electrical work, their softness being a very important quality in certain classes of work, and greatly in demand on this account.

NOTE: On many of the mining fields of Northern Queensland, particularly at Brooklands, near Junction Creek, and at the Einasleigh River, mica deposits are of common occurrence. Up to the present time, however, sheet mica of marketable quality and quantity has not been found. In the following occurrences the varieties have not been classified, but further references are given under the variety names mentioned above, more particularly under Muscovite.

6552. ——. *Assoc.with* Gold, in quartz and felspar. *Loc.* Golden Gate 10 N. Lease, Golden Gate Centre, 90 miles (by rail) S.E. of Normanton (Croydon line). *Co.* Surrey; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 118, p. 10 (1896).

6553. ——. *Assoc.with* Cassiterite, Tourmaline, Mispickel, and Felspar. *Loc.* Harris and Party's Tin Lease, Rossville, Annan R. Tinfield, 25 miles S. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 35, p. 16 (1887).

6554. ——. *Assoc.with* Silver. *Loc.* Head of Wandoo Cr., trib. of Muldiva Cr., 10 miles N.W. of Mungana Rail. Stn. (Chillagoe line). *Co.* Bolwarra; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 16 (1898).

6555. ——. *Assoc.with* Felspar Crystals, in granite. *Loc.* Between Georgetown and Cumberland, 20½ miles N.W.byN. of Charleston Rail. Stn. (Etheridge line). *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 7 (1887).

6556. ——. *Assoc.with* Cassiterite, Chlorite, and Rock Crystals, in quartz lode. *Loc.* Just-in-Time Tin Mine, on hill nr. Ragged Cr., Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 33 (1897).

6557. ——. *Assoc.with* Cassiterite, in felsitic rock. *Loc.* Ben Lomond Mine, Watsonville, 7 miles E.S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

6558. ——. *Assoc.with* Cassiterite, Copper Pyrites, Iron Pyrites, Mispickel, and Galena, in lode. *Loc.* Shakespeare Tin Lease, Koorboora, 108 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub, 69, p. 11 (1891).

6559. ——. *Assoc.with* Cassiterite and Wolfram, in ferruginous quartz. *Loc.* Nelly Grant Tin Claim, Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 7 (1883).

6560. ——. Mt. Davenport, 4 miles N.W. of Cape River Rail. Stn. (Northern line), Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 2 (1891).

6561. ——. *Assoc.with* Felspar and Quartz. *Loc.* Corn Tweed Hill, nr. Homebush, 5 miles E. of Eton, 28 miles (by rail and road) S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 53, p. 8 (1889).

6562. ——. *Assoc.with* Wolfram, Hematite, Garnet, and Stibnite (?), in lode. *Loc.* Eungella Stn., 30 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 36, p. 6 (1887).

6563. ——. Sandy Cr., 12 miles S. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 53, p. 5 (1889).

6564. ——. *Assoc.with* Felspar, in boss of porphyrite. *Loc.* Black Snake Goldfield, 40 miles S. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 28, p. 4 (1886).

6565. ——. *Assoc.with* Gold, Magnetite, Ilmenite, Zircon, and Topaz, in yellow sand. *Loc.* 17 miles up Vanapa R., 32 miles N of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 56, p. 2 (1889).

——. *See also* Biotite, Lepidolite, Muscovite, Chalcolite, Vermiculite.

Mica (Uran-). *See* Chalcolite.

Mickett's Limestone Quarry, Dalysford, Mt. Perry. *Min.Ref.* Magnetite, *see* 5971; limestone, 693.

Mick's Opal Mine, 11 miles W. of Jundah Opal Field. *Min.Ref.* Precious Opal, *see* 6940B.

Miclere Diggings, 20 miles N.byW. of Clermont. *Discovery:* Gold discovered here in 1865. *Min.Ref.* Coal (bands), *see* 1673; Gold (alluvial), 3282-3287, (reef) 4142; Hematite, 4761. *See* Geological Note under Black Ridge.

Middle Camp (Boulder Hill), Miclere, Clermont. *Min.Ref.* Gold (alluvial), *see* 3282.

—— Cr. Bore. *See under* Artesian Bores. No. 200.

—— Park Bore. *See under* Artesian Bores. No. 8.

—— Valley Sub-artesian Bore. *See under* Artesian Bores. No. 207.

Middleton Town Bore. *See under* Artesian Bores. No. 36.

Mighty Atom Group, Leichhardt R., Cloncurry. *Includes* Mighty Atom, Mt. Millicent, Mt. Bornite, Little Wonder M. Leases. *Min.Ref.* Azurite, *see* 171; Chrysocolla, 1512, 1513; Copper (native), 1986; Copper Pyrites, 2108-2111; Cuprite, 2412, 2413; Limonite, 5812-5817; Malachite, 6174-6177; Redruthite, 7262-7265; Tile Ore, 2531-2534.

—— —— M.L. (274), Cloncurry. *Min.Ref.* Azurite, *see* 171; Chrysocolla, 1513; Copper Pyrites, 2108; Limonite, 5813; Malachite, 6174; Redruthite, 7262; Tile Ore, 2531.

Miles-Taroom Road, nr. Miles. *Min.Ref.* Wood Opal, *see* 7004.

Milford Rocks Head Stn., N.W. of Esk. *Min.Ref.* Gold, *see* 4194.

Milkonan's Point, Lower Cape, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3265.

Milky Way Reef, Goldsmith Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3738.

Mill Charges—

Charters Towers G.F.	11s.	Gladstone Fields	12s. to 20s.
Chillagoe M.F.	12s.	Gympie G.F.	7s. to 8s.
Clermont G.F.	15s. to 21s.	Hamilton G.F.	20s.
Starke G.F.	20s. to 25s.	Mt. Morgan	15s.
Coen G.F.	15s.	Palmer G.F.	20s. to 25s.
Croydon G.F.	10s.	Ravenswood M.F.	10s. to 15s.
Etheridge G.F.	12s. 6d.	Rockhampton Fields	13s.

Mill Mill Bore. *See under* Artesian Bores. No. 391.

Millchester, 2 miles E.S.E. of Charters Towers. *See* Pl. 28. *Lat.*, 20° 7′ S.; *Long.*, 146° 27′ E. *Min.Ref.* Gold, *see* 3955; Iron Pyrites, 5173. *See* Charters Towers for Geological Note.

—— G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2893; Gold, 3915; Iron Pyrites, 5181.

—— Reef, Charters Towers Goldfield. *Min.Ref.* Gold, Galena, Iron Pyrites, *see* 3961.

Millet's Wellington, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2894; Gold, 3916; Iron Pyrites, 5182.

Millie Station Bore. *See under* Artesian Bores. No. 277.

Millmerran (near). *Min.Ref.* Coal, *see* 1026AI.

Mills's Cr., Miclere, Clermont Goldfield. *Min.Ref.* Coal Bands, *see* 1673; Gold (alluvial), 3283-3286.

Mills's Day Dawn United G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2895; Gold, 3917; Iron Pyrites, 5183; Zinc Blende, 8125.

Millungera Run Bores. *See under* Artesian Bores. No. 337.

Milo Stn., 10 miles N.W. of Adavale. *Min.Ref.* Barytes, *see* 282.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 338.

Milton Brewery Bore. *See under* Artesian Bores. No. 182.

Milton (Norton) Goldfield—

Situation: *See maps*, Pls. 2, 3, 34. Thirty-three miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. Centre about *Lat.* 24° 20′ S., *Long.* 151° 20′ E.

Discovery: In 1871, by Geo. Williams and Charles Lett.

Population: Less than 20.

Proclamation: First (and only one) gazetted, 12th May, 1879, as follows:—Commencing at a point bearing north from the north-east corner of Selection 291, Gladstone Register, and west from tree on survey of Milton Run marked G.6 on Eastern Boyne River, and bounded thence by a line east passing through said tree about six and a-half miles to Many Peaks Range, being the eastern watershed of Boyne River; thence by that range southerly about four miles in a direct line to a point bearing east from junction of Wattle Creek with Boyne River; thence west about six and a-half miles to a point south of the south-east corner of abovementioned selection; thence north by a line passing along eastern boundary of said selection about four miles to the point of commencement;—exclusive of all alienated, selected, and reserved lands.

Area: 16,640 acres (26 sq. miles).

Mineral Statistics: *Included in* "Other Goldfields," *tables and diagram*, Pls. 36, 46, 46a, 47.

Mineral References: Gold, *see* 4264-4294; Silver, 7518-7527; Lead (Galena), 3043-3052; Copper (Azurite), 245, (Bornite) 433, (Copper Pyrites) 2288-2294, (Malachite) 6357, 6358, (Redruthite) 7301, 7302; Antimony (Stibnite), 7650; Zinc Blende, 8186-8200; Iron (Iron Pyrites), 5365-5390, (Limonite) 5908, (Mispickel) 6787-6800, (Scorodite) 7375, 7376. Other Minerals: Biotite, 308; Calcite, 530-534; Hornblende, 4843; Orthoclase, 7050; Scapolite, 7338b.

Geological Note: The rocks are granite, syenite, diorite, dolerite, porphyry, and slate. The first three merge into one another and form an eruptive boss in contact with the slate. Veins of quartz pass from the granite boss into the slate, but the gold-bearing quartz reefs are found in the granite in association with dykes of diorite, porphyry, and dolerite formed subsequent to the reefs. *See* G.S.Q. Pub. Nos. 21 and 208 for details.

Geological Publications: Reports—Nos. 21 (1885), 58 (1890), 208 (1907). *See under* Geol. Surv. Pub. List for title. *See also under* Supplementary Report List, Nos. 6, 21.

Warden: Stationed at Gladstone. Inspector of Mines: Stationed at Rockhampton.

Reports: Inspector's and Warden's monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Mimetite. *Sym.* Green Lead Ore. *Compo.*, Arsenate of lead. *Colour*, yellowish, whitish. *Streak*, whitish. Resinous. *H.* = 3·5. *Sp.gr.* = 7·2. *Contents (max.)*, Lead 69 per cent.

6566. ——. *Assoc.with* Galena, Tetrahedrite, Malachite, Azurite, Hematite, and Limonite, in lode. *Loc.* Mt. Garnet Mines, Return Cr., 136 miles (by rail) S.W. of Cairns. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

Mine, nr. Cania, S.S.W. of Gladstone. *Min.Ref.* Copper Pyrite, *see* 2303; Mispickel, 6803; Zinc Blende, 8205.

—— (adjoining Tennyson Mine), Koorboora. *Min.Ref.* Cassiterite, *see* 948; Native Silver, 7551.

—— Cr., trib. of Black Waterhole Cr., Mt. Spencer Goldfield. *Min.Ref.* Bismutite, *see* 409; Copper Pyrites, 2271; Gold (alluvial), 3365, (reef) 4118; Hematite, 4758; Mispickel, 6759; Silver, 7498.

Mine Managers, Board of Examiners. *See* "Board of Examiners."

Mineral Areas (25, 26), Jibbinbar. *Min. Ref.* Copper Pyrites, *see* 2183; Galena, 2830; Gold, 3833; Malachite, 6249; Minium, 6593; Mispickel, 6713, 6714; Silver, 7472.

—— District Maps of Queensland. *See maps*, Pls. 3, 5, 7, 9, 11, 13, 15, 17, 19, 21.

Mineral Exports. *See under* Exports.

Mineral Fields of Queensland. Of the 670,500 square miles contained in the State, there are actually 78,000 square miles officially reserved as gold and mineral fields, while 50,000 square miles are known to contain coal measures. Opal deposits are scattered over 40,000 square miles, and 250,000 square miles (including the opal area) are artesian-water bearing. About one-quarter of the State, therefore, contains minerals of commercial value.

The gold, coal, and other mineral areas are called "fields," some of which are "proclaimed," others being classed as "provisional." There are also unclassified areas now being utilised for agricultural or grazing purposes, on nearly all of which mining operations are permitted under certain restricted conditions.

The following is a list of mineral fields (other than gold or coal fields):—

Anakie (Gems). *See maps*, Pls. 10, 11.
Bowden (Tin, Wolfram). *See maps*, Pls. 8, 9.
Burketown (Silver, Lead, Copper). *See maps*, Pls. 20, 21.
Chillagoe (late Walsh and Tinaroo, *in part*) (Copper, Silver, Lead, etc.), *See maps*, Pls. 8, 9, 32.
Cloncurry (Copper). *See maps*, Pls. 20, 21, 23.
Cooktown (Tin). *See maps*, Pls. 8, 9, 32.
Cunnamulla (Opal). *See maps*, Pls. 18, 19.
Glassford Creek (Copper). *See maps*, Pls. 2, 3, 34.
Herberton (late Walsh and Tinaroo, *in part*) (Tin, Copper, Gold, Bismuth, Wolfram, etc.). *See maps*, Pls. 8, 9, 16, 17, 22.
Kangaroo Hills (Tin, Copper, Silver, Lead). *See maps*, Pls. 16, 17.
Kilkivan (Copper, Silver). *See maps*, Pls. 4, 5.
Kynuna (Opal). *See maps*, Pls. 20, 21.
Mt. Cannindah (Copper). *See maps*, Pls. 4, 5.
Mt. Flora (Copper). *See maps*, Pls. 10, 11.
Noble Island (Wolfram). *See maps*, Pls. 8, 9.
Opalton (Opal). *See maps*, Pls. 18, 19, 20, 21.
Paroo (Opal). *See maps*, Pls. 18, 19.
Rosedale (Wolfram). *See maps*, Pls. 2, 3.
Sellheim (Silver, Bismuth). *See maps*, Pls. 14, 15.
Stanthorpe (Tin, Silver, Lead, Copper, etc.). *See maps*, Pls. 12, 13, 30).
Star River (Argentine) (Silver, Lead, Bismuth, Wolfram, etc.). *See maps*, Pls. 16, 17.

Farther references are given under names of fields.

See also under Goldfields, which include some mineral fields.

See also under Coalfields.

Tenningering (Mt. Perry) (Copper, Silver, etc.). *See maps*, Pls. 4, 5.

Walsh and Tinaroo (now Herberton and Chillagoe) (Tin, Silver, Copper, Wolfram, Bismuth, etc.). *See maps*, Pls. 8, 9, 16, 17, 22.

Windsor. *See maps*, Pls. 20, 21.

Mineral Freehold No. 14 (Gt. Australia Group), Cloncurry. *Min. Ref.* Native Copper, *see* 1977; Cuprite, 2387; Limonite, 5748; Malachite, 6085.

—— Lease (40 acres), Douglas Cr., Kangaroo Hills Mineral Field. *Min. Ref.* Azurite, *see* 216A; Cassiterite, 1153; Hematite, 4747; Iron Pyrites, 5280; Limonite, 5880; Malachite, 6301.

Mineral Lease (16), Perry Scrub. *Min.Ref.* Azurite, *see* 173; Malachite, 6195; Psilomelane, 7080.

—— —— (25), Gympie Copper Mines, Scrub Paddock Diggings. *Min.Ref.* Copper Pyrites, *see* 2138; Iron Pyrites, 5009; Magnetite, 5983.

—— —— (26), Gympie Copper Mines, Scrub Paddock Diggings. *Min.Ref.* Galena, *see* 2728; Iron Pyrites, 5010.

—— —— (64), Mosquito Cr., S.W.byW. of Charleston. *Min.Ref.* Galena, *see* 2756A, 2756B; Limonite, 5840B; Massicot, 6525C; Silver, 7450B.

—— —— (No. 262), Kroombit, S.S.W. of Gladstone. *Min.Ref.* Azurite, *see* 253A; Copper Pyrites, 2306A; Cuprite, 2479A; Hematite, 4799A; Iron Pyrites, 5414A; Limonite, 5919A; Magnetite, 6054A; Malachite, 6372A.

Mineral Localities. Nearly all the gold, mineral, and coal deposits are confined to the eastern half of Queensland, while the artesian water basin and all the opal deposits are exclusively confined to the western half, a line joining Normanton, on the Gulf of Carpentaria, with Wallangarra, the southern border town, roughly representing the boundary between the eastern and western portions. Of all payable minerals *Gold* is found in the greatest number of localities and is scattered over the largest area of country, Charters Towers, Mt. Morgan, and Gympie being the principal centres. *Copper* and *Silver* also occur in many places, and are frequently associated with the gold, although copper occurs in many lodes with only traces of the precious metal, while the great bulk of the silver has been found with lead.

Coal is well distributed over the eastern half of the State, but the largest and most important coal areas—Ipswich, Burrum, Dawson-Mackenzie, and Clermont—are contained in the south-eastern quarter. *Tin* is comparatively restricted in its occurrence, the two principal districts being Herberton (Walsh and Tinaroo) and Stanthorpe, each of which has produced large quantities of the mineral, and will probably continue to yield it for many years to come. *Wolfram*, next in importance, commonly occurs in Northern Queensland, most of the yields coming from the Chillagoe district. *Lead* is being mined in association with silver, principally about Stanthorpe and Chillagoe. *Bismuth* is being produced at Biggenden in the Burnett District, and also in the Herberton District, while *Molybdenite*, in association with wolfram and bismuth, is mined exclusively in the latter area.

Ironstone occurs in fairly large quantities in the State, the largest available deposit being that on Iron Island, to the north of Rockhampton, other large deposits of good ironstone occurring in the Cloncurry district. *Manganese* is also to be found in many parts of the State, the deposits occurring near Gladstone and Gympie being very extensive, those to the south of Gympie, about Pie Creek, being considered to have a prospective value unequalled by any of the others.

Limestone is an important asset, and no trouble need be experienced in obtaining supplies for smelting purposes, or for the manufacture of Portland cement or other building material. *Precious Opal* is to be found over an area of thousands of square miles in Western Queensland, and *Sapphires* of beautiful orange, yellow, green, and blue shades, occur in a small area at the Anakie fields in Central Queensland. *Diamonds* are of rare occurrence, and have only been recorded at a few localities, probably the number of specimens of this gemstone found in the whole State not exceeding one hundred.

Zinc, mostly in association with minerals containing gold, silver, and copper, is to be found all over the eastern districts, although no works have been established for its treatment, nor has it been saved as a by-product. *Cobalt*, *Nickel*, and *Mercury* have only been found in small quantities, and may be considered three of our rarest metals. *Antimony* occurrences are recorded at Hungry Hill, near Eidsvold, Northcote, near the Hodgkinson Goldfield, Cocoa Creek, Mitchell River, and other places. The first-mentioned is important, as large deposits are known to occur there. *Platinum* is disseminated with gold in the beach sands along the coast, but the quantities obtained in the past have not been sufficient to pay working expenses; this metal also occurring with gold in some of the alluvial deposits at Gympie. Of the few minerals which contain *Rare Elements*, Monazite has been found in a large

Mineral Localities—*continued:*

number of mines associated with Wolfram and Tin. *Graphite* occurrences are common, but the quality is generally poor, a mine at Mt. Bopple, near Tiaro, being the only one to produce it on a commercial scale.

For further notes, *see under* separate heading the minerals mentioned above in italics. *See also under* the following headings:—

Apatite.
Arsenic.
Asbestos.
Antimony.
Barytes.
Beryl.
Cadmium.
Cement.
Cerium.
Chalk.
Chalcedony.
Chromium.
Corundum.
Felspar.
Fluorspar.
Guano.
Jasper.
Magnesite.
Mica.
Oil Shale.
Phosphates.
Pigments.
Radium.
Rutile.
Salt.
Scheelite.
Serpentine.
Tantalite.
Thorium.
Titanium.
Topaz.
Tripolite.
Turquoise.
Uranium.
Vanadium.
Zircon.

Mineral, Metal, and Other Imports—

Acids—muriatic, sulphuric, nitric.
Aluminium.
Alum.
Antimony.
Antimonial-lead compounds.
Asbestos.
Barytes.
Blasting gelatine.
Bronze.
Britannia metal.
Calcium carbide.
Carborundum.
China and porcelain.
Coal.
Copper—bars, sheets, plates, etc.
Cyanide of potash.
Dynamite.
Earthenware.
Excavating machinery.
Emery.
Fireclay manufactures.
Gelignite.
Glassware.
Graphite.
Iron and steel.
Imitation gems.
Kerosene.
Lead.
Lithographic stones.
Marble.
Mercury.
Mineral oil.
Mining machinery.
Naphtha.
Nickel.
Ore-dressing machinery.
Paraffin wax.
Petroleum.
Pigments.
Plaster of Paris.
Platinum.
Plumbago.
Pumice stone.
Quicksilver.
Red lead.
Rock salt.
Saltpetre.
Stone (ornamental).
Sulphur.
Superphosphates.
Tiles—flooring, roofing.
Tinned sheets and plates.
White lead.
Zinc sheets.

Mineral Oil Co.'s Bore. *See under* Gas Bores.

Mineral Pitch. *Syn.* Asphaltum, *which see.*

Mineral-Producing Centres (for principal minerals)—

Gold ....Charters Towers, Mt. Morgan, Gympie.
Copper ....Mt. Morgan, Chillagoe, Cloncurry, Mt. Chalmers, Mt. Perry, Many Peaks.
Tin ....Herberton and Chillagoe Fields, Stanthorpe.
Silver-lead ......Chillagoe, Texas.
Manganese......Gladstone, Gympie.
Wolfram.........Herberton and Chillagoe Fields.
Molybdenite....Herberton and Chillagoe Fields.
Bismuth ....Herberton and Chillagoe Fields, Biggenden.
Coal ....Ipswich, Burrum, Clermont, Central Railway.
Sapphires ....Anakie.
Opals ....Paroo, Opalton, Kynuna.

See further references under name of mineral, and under name of locality.

Mineral Production of Commonwealth to end of 1912.

States.	Gold.	Silver.	Lead.	Copper.	Coal.	Tin.	Bismuth.	Wolfram.	Gems.	Other Minerals.	Total of each State.
	£	£	£	£	£	£	£	£	£	£	£
Queensland	75,218,494	1,722,319	534,504	10,948,399	5,377,240	8,199,391	111,089	735,665	398,497 (*a*)	763,489 (*e*)	104,009,087
Each mineral % of all States' production	13·83%*	2·60%	17·42%	17·55%	6·88%	27·11%	40·95%	80·75%	21·54%	3·19%	
Each mineral % of Queensland's total production	72·30%‡	1·65%	0·52%	10·53%	5·17%	7·89%	0·10%	0·70%	0·39%	0·73%	= 100%
New South Wales	59,462,975	58,220,989	2 000,911	11,784,102	69,087,688	9,327,609	128,537	132,517	1,450,615 (*b*)	17,923,027 (*f*)	229 518,970
Each mineral % of all States' production	10·93%*	87·98%	65·20%	18·90%	88·36%	30·84%	47·38%	14·55%	78·42%	75·00%	
Each mineral % of N.S.W. total production	25·90%‡	25·36%	0·87%	5·13%	30·10%	4·06%	0·06%	0·06%	0·63%	7·81%	= 100%
Victoria	291,703,453	214,175	5,760	215,761	2,462,391	782,680	..	5,659	758 (*c*)	4,297,478 (*g*)	299,688,115
Each mineral % of all States' production	53·62%*	0·33%	0·19%	0·35%	3·15%	2·59%	..	0·62%	0·04%	17·99%	
Each mineral % of Victoria's total production	97·34%‡	0·07%	..	0·07%	0·82%	0·26%	..	..	..	1·44%	= 100%
South Australia	1,390,525	243,225	102,503	27,877,765	..	..	16,679	20	(*d*)	824,303 (*h*)	30,455,020
Each mineral % of all States' production	0·26%*	0·37%	3·34%	44·72%	..	..	6·15%	..	..	3·45%	
Each mineral % of S. Australia's total production	4·57%‡	0·80%	0·33%	91·54%	..	..	0·05%	..	..	2·70%	= 100%
Western Australia	109,298,872	283,848	425,133	1,113,062	203,751	1,051,155	..	1,116	..	22 331	112,399,268
Each mineral % of all States' production	20·09%*	0·43%	13·85%	1·79%	0·26%	3·47%	..	0·12%	..	0·09%	
Each mineral % of W. Australia's total production	97·25%‡	0·25%	0·37%	0·99%	0·18%	0·94%	..	..	..	0·02%	= 100%
Tasmania	6,914,132	5,488,286	..	10,398,583	1,057,700	10,884,922	14,961	36,033	..	66,834	34,861,451
Each mineral % of all States' production	1·27%*	8·29%	..	16·68%	1·35%	35·99%	5·52%	3·96%	..	0·28%	
Each mineral % of Tasmania's total production	19·83%‡	15·74%	..	29·83%	3·03%	31·24%	0·04%	0·10%	..	0·19%	= 100%
Total Value	543,988,451	66,172,842	3,068,811	62,337,672	78,188,770	30,245,757	271,266	911,010	1,849,870	23,897,462	£810,931,911
and % of total mineral production of all States	= 67·08%	= 8·16%	= 0·38%	= 7·69%	= 9·64%	= 3·73%	= 0·03%	= 0·11%	= 0·23%	= 2·95%	= 100%

NOTES.—* Percentage of total value at bottom of column. ‡ Percentage of total values at end of line. (*a*) Includes Opals and Sapphires. (*b*) Includes Opals and Diamonds, value of the Opal being over a million pounds. (*c*) Includes Diamonds and Sapphires. Salt is also being produced. (*d*) Tourmaline is produced, but no values stated. (*e*) Includes Ironstone and Limestone Flux, and Manganese. (*f*) Includes Coke, Iron, Zinc, Oil Shale, and Portland Cement. (*g*) Mostly building stones. (*h*) Includes Ironstone and Limestone Flux, Crude Salt, and Phosphate Rock.

—— Prospecting. *See* Prospecting for Minerals in Queensland.

—— Selection (1165, 1213, 1751, and 1714), Cressbrook Cr., N.N.W. of Ipswich. *Min.Ref.* Copper (Ores), *see* 2044.

—— —— (2307), 2½ miles S.S.W. of Degilbo. *Min.Ref.* Manganese-dioxide, *see* 6397.

—— —— (2447), 5 miles W. of Kilkivan. *Includes* Commotion, Central, and Bloodsworth Cinnabar Lodes. *Min.Ref.* Cinnabar, *see* 1550-1556.

—— —— (3022), N.N.E. of Withersfield. *See* Anakie Sapphire Field.

Mineral Statistics. The total value of all minerals produced in the State between 1860 and 1912 amounted to £104,009,087. During the first few years the values fluctuated between £10,000 and £100,000, but after 1877 nearly every year showed an increase on the previous year's return—up to 1906. Notwithstanding the numerous discoveries in gold and other minerals at various times, these increases were fairly uniform, and are shown tabulated on Plate 45.

The largest annual mineral yield was in 1906, the value being £4,198,648, this representing 4·03 per cent. of the total value of the mineral production for all years. The gold yield for this year was the lowest for ten years, but the activity in copper and tin mining resulted in the production of large yields of these two metals, and more than compensated for the low gold returns. The last year, 1912, is remarkable for having yielded the smallest quantity of gold since 1886, a period of 25 years, and for producing the highest yield in minerals other than gold since the commencement of mining in the State, the returns for copper and coal being the highest recorded, those for tin being the second highest.

Amongst individual mineral yields gold, of course, takes first place, with a value of £75,218,494, up to the end of 1912, this representing 72·31 per cent. of the whole of the value of the mineral products of the State. Copper comes next, with a value of £10,948,399 (10·52 per cent.); then tin, £8,199,391 (7·88 per cent.); coal, £5,377,240 (5·17 per cent.); silver, £1,722,319 (1·65 per cent.); antimony, bismuth, wolfram, lead, molybdenite, opal, sapphire, all being less, with values below 1 per cent. From the above it will be seen that the value of the gold yield of the State is more than 2½ times greater than that of all the other minerals put together.

Regarding mineral centres, the richest mineral locality is shown to be the Charters Towers Goldfield, with its mineral production, up to the end of 1912, valued at £27,272,495, of which the odd thousands about make up the value of minerals other than gold. This is 26·22 per cent. of the value of the whole mineral production, which indicates that this goldfield, contained in an area of about five square miles of productive ground, has produced more than a quarter of the whole mineral wealth of Queensland.

Rockhampton, with Mt. Morgan, is the next richest district, the total value of its mineral returns being £20,543,837, of which £17,090,154 is from gold produced at Mt. Morgan and smaller fields, the value of all minerals representing 19·74 per cent. of the State's total mineral production.

Gympie Goldfield comes next, with a production valued at £11,321,552, all of which is from gold, with the exception of £30,000 from various copper mines outside the goldfield proper, the total value being 10·89 per cent. of that of the whole State's production.

The Palmer Goldfield, which is now almost deserted, has to its credit a mineral production valued at £5,802,054, which is equivalent to 5·58 per cent. of the State's total mineral production. It is 20 years since its annual production reached 3,000 ounces, and during the last two years the yearly returns have not reached 300 ounces. In 1878 the annual output reached 116,759 ounces, and in the four years previous to this 819,697 ounces were recorded.

Herberton, Chillagoe, and Hodgkinson (Walsh and Tinaroo) have yielded minerals to the value of £9,776,243, this being made up of tin, copper, silver, wolfram, lead, etc., the tin yield being the highest, with a value of £4,171,916, the decreasing importance of the other minerals being in the order they are mentioned.

Ipswich, even with its large coal output, comes below the important metal-producing centres in its mineral wealth, its products being valued at £4,135,428 up to the end of 1912. Other localities coming close to Ipswich in the value of their minerals are Ravenswood (£3,695,607), Croydon (£3,189,393), and Stanthorpe (£3,163,138). For other details regarding mineral statistics *see tables and diagrams*, Plates 36-47.

Mineral Testing. The Geological Survey Office undertakes the classification of all mineral specimens free of cost. *See under* Assaying Mineral Samples.

Mineral Wax. A simple hydrocarbon of indefinite composition. *See* Ozokerite.

Mineral Water.

6567. —— ——. Einasleigh Hot Springs, 102 miles (by rail) S.S.W. of Almaden Rail. Stn. (Etheridge line). *Co.* Gilbert; *Dist.* Cook. Analysis show total solids equal 57·6 grains per gallon, of which 32·6 per cent. is chlorides of soda and potash, and 16 per cent. is carbonate of soda and potash, the remainder being principally carbonate of lime and magnesia. *Ref.* G.S.Q. Pub. No. 77, p. 6 (1891).

6568. —— ——. Petford (Oakvale) Mineral Springs, 2 miles S. of Petford Rail. Stn. (Chillagoe line), 99 miles (by rail and road) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. Analysis shows 104 grains of total solids per gallon, of which 25 per cent. is carbonate of lime, 54 per cent. is carbonate of soda, and 11 per cent. is chloride of soda, the remainder being made up of silica, iron, alumina, and carbonate of magnesia. *Ref.* G.S.Q. Pub. No. 159, p. 19 (1901). *See also* Water Analyses (Table of), No. 465.

6569. —— ——. Silver Spur Mine (300 ft. level), Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. Analysis shows 27·7 per cent. of total solids per gallon, of which 37 per cent. is carbonate of lime, and 23 per cent. is sulphate of magnesia, the other constituents being silica, carbonate of magnesia, and sulphates of potash and soda.

6570. —— ——. Nettle's Cr. or Innot Hot Springs, 8 miles E.byN. of Mt. Garnet Rail. Stn. (Chillagoe br. line), 7 miles S.S.E. of Coolgarra. *Co.* Cardwell; *Dist.* Kennedy North Analysis shows the water contains 41 grains of total solids per gallon, of which 19 per cent. is chloride of soda, and 8 per cent. is carbonate of soda. Other constituents include small percentages of iron, alumina, carbonate of lime, and sulphate of soda. *Ref.* G.S.Q. Pub. No. 159, p. 19 (1907). *See also* Table of Water Analyses. No. 4667.

6571. —— ——. Maria Cr., 4 miles W. of Tolmie's Rail. Stn. (Central line), 133 miles (by rail and road) W.byS. of Rockhampton. *Co.* Humboldt; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155, p. 18 (1901). Analysis shows 864 grains of total solids per gallon, of which 576 grains is carbonate of soda, 223 grains is chloride of soda, 45 grains carbonate of magnesia, and 15 grains of carbonate of lime, other constituents being silica, iron, and alumina. *Ref. See under* Water Analysis No. 54, Q.G.M.J., vol. 1, p. 4 (1900), G.S.Q. Pub. 143, p. 24 (1898), and G.S.Q. Pub. 155, p. 18 (1901).

6571a. —— ——. Muckadilla Bore, 344 miles W. of Brisbane (Western Railway line). *Co.* Waldegrave; *Dist.* Maranoa. *Ref. See* Water Analysis (Table of), No. 38. The water contains 34 grains of solids per gallon, of which carbonate and chloride of soda constitutes 31 per cent., the other ingredients being carbonate of lime, with iron and alumina. The flow, uncontrolled, is 23,000 gallons daily. *See under* Artesian Bores and Water Analyses, No. 31, for other details.

6572. —— ——. "The Springs," nr. Helidon, 72 miles (by rail)W.byS. of Brisbane. Par. Terry. *Co.* Cavendish; *Dist.* Moreton. *Ref.* G.S.Q. Pub. No. 143, p. 1 (1898). Helidon Spa Water is obtained from natural springs in an alluvial swamp. The water is charged with carbon dioxide, and contains about 200 grains per gallon of carbonate of soda, with small quantities of carbonates of lime and magnesia. *See table under* Water Analyses, No. 493, for details. This is the only Queensland mineral water on the market.

6572a. —— ——. *Loc.* near Boonah Rail. Stn. (Fassifern Branch). *Co.* Churchill; *Dist.* Moreton. The spring is said to be a good flow passing through 60 feet of sandstone. No analyses available.

6573. —— ——. Sanderson's (Stanwell) Bore, Stony Creek, 2 miles S.S.W. of Stanwell Rail. Stn. (Central line), 18 miles (by rail and road) S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. For Analysis *see table under* Water Analysis, No. 53.

6574. —— ——. Cape La Billardière, Fergusson Is., 231 miles E. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 85, p. 23 (1892).

—— ——. For other mineral waters *see under* Table of Artesian Bores and Water Analyses.

Mineral Water Analyses. *See table following* Artesian Bores.

Miner's Creek, Collaroy, N.W. of St. Lawrence. *Min.Ref.* Gold, *see* 4181; Malachite, 6338; Mispickel, 6771; Silver, 7504.

—— Dream Mine, Bob's Cr., Mt. Morgan (Crocodile Cr.) Goldfield. *Min.Ref.* Galena, *see* 3060; Gold, 4337; Ironstone, 5621.

—— Punch Workings, Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 769.

—— Right Mine, 1 mile E.byS. of Croydon Rail. Stn. *Min.Ref.* Gold (alluvial), *see* 3493a; Limonite, 5800a; Silver (native), 7545a.

Miners' Health Commission. *See under* Gov. Min. Jour., Special Reports, No. 123.

Miners' Rights, issued in 1912:—

Herberton	1,258
Charters Towers	1,118
Chillagoe	559
Georgetown	560
Cloncurry	933
Mt. Morgan	521
Gympie	570
Gladstone	536
Clermont	436
Rockhampton	198
Cooktown	289
Ravenswood	186
Nanango	149
Croydon	99
Bundaberg	10
Ingham	208
Stanthorpe	141
Coen	55
Eidsvold	64
Maytown	78
Mackay	125
Other localities	773
Total	8,866

Miners' Wages. *See under* Wages.

Minerva Cr., Springsure. *Min.Ref.* Gold, *see* 4172; Hyalite, 7014; Jasper, 5645.

Minerals of Queensland. List of Synonyms and Varieties. (Adopted names in black type.)

Actinolite, var. of Hornblende.
Agate, var. of Chalcedony.
Alabaster, var. of Gypsum.
Albite, syn. Soda Felspar.
Almandine, var. of Garnet.
Altaite.
Alum (Native), see Kalinite.
Aluminite, see Websterite.
Alunogen.
Amethyst, var. of Quartz.
Amphibole, see Hornblende.
Analcime, syn. Analcite.
Andalusite, var. Chiastolite.
Andradite, var. of Garnet.
Anglesite.
Ankerite.
Anthracite, var. of Coal.
Antimonial Lead Ore, see Bournonite.
Antimonite, see Stibnite.
Antimony Glance, see Stibnite.
Apatite.
Apophyllite.
Aquamarine, var. of Beryl.
Aragonite.
Argentine, var. of Calcite.
Argentite.
Arsenic (Native).
Arsenical Pyrites, see Mispickel.
Arsenolite, syn. White Arsenic.
Arsenopyrite, see Mispickel.
Asbestos, var. of Serpentine and Hornblende.
Asbolane, syn. Asbolite, Earthy Cobalt, Cobaltiferous Wad.
Asphaltum, syn. Mineral Pitch.
Asteria, syn. Star Sapphire.
Atacamite.
Augite, var. Diallage.
Aurichalcite.
Azurite.

Barklyite, sub. var of Ruby (var. of Corundum).
Barytes, syn. Heavy Spar.
Basaltic Hornblende, var. of Hornblende.
Bat Guano.
Beauxite, syn. Bauxite.
Beryl, var. Aquamarine.
Biotite, syn. Magnesia-iron Mica, Black Mica.
Bismite, syn. Bismuth Ochre.
Bismuth (Native).
Bismuth Glance, see Bismuthinite.
Bismuth Ochre, see Bismite.
Bismuthinite, syn. Bismuthine, Bismuth Glance.
Bismutite, syn. Bismuthite.
Bitter Spar, see Dolomite.
Black Copper, see Tenorite.
Black Jack, see Zinc Blende.
Black Jasper, syn. Lydianstone, Touchstone.
Black Mica, see Biotite.
Black Opal, var. of Opal.
Black Tin, var. of Cassiterite.
Blacklead, see Graphite.
Blende, see Zinc Blende.
Bloodstone, syn. Heliotrope, var. of Chalcedony.
Blue Iron Earth, see Vivianite.
Blue Vitriol, see Chalcanthite.
Bog Iron Ore, var. of Limonite.
Bog Manganese.
Bornite, syn. Erubescite, Variegated Copper Ore.
Bournonite, syn. Antimonial Lead Ore.
Bronzite.
Brown Coal, see Lignite.
Brown Hematite, see Limonite.
Brown Iron Ore, see Limonite.

Cacoxenite.
Cadmium Blende, syn. Greenockite.
Cairngorm, var. of Quartz.
Calamine.
Calaverite.
Calcareous Sinter, var. of Calcite.
Calcareous Tufa, var. of Calcite.
Calcite, syn. Calc-Spar. Varieties—Argentine, Dogtooth Spar, Iceland Spar, Ferro-calcite, Fontainbleau Sandstone, Nailhead Spar, Satin Spar, Stalactite, Stalagmite, Strontiano-calcite, Calcareous Sinter, Travertine, Tufa, Oolitic Limestone, Fossiliferous Limestone, Crinoidal Limestone, Massive Limestone, Chalk, Marble.

Minerals of Queensland—*continued:*

List of Synonyms and Varieties. (Adopted names in black type.)

Calc-Spar, see Calcite.
Cannel-Coal, var. of Coal.
Carbonaceous Shale.
Carnelian, syn. Sard. var. of Chalcedony.
Cassiterite, syn. Tinstone. Varieties—Stream Tin, Resin Tin, Toad's-eye Tin, Wood Tin.
Cat's-eye, var. of Corundum.
Celestine, syn. Celestite.
Cerargyrite, syn. Kerargyrite.
Cerussite, syn. White Lead Ore.
Cervantite.
Ceylonite, var. of Spinel.
Chabazite.
Chalcanthite, syn. Blue Vitriol, Copper Vitriol.
Chalcedony, vars. Chrysoprase, Hornstone Lithophyses, Prase, Agate, Bloodstone, Carnelian ; sub-vars. Onyx, Sardonyx.
Chalcocite, see Redruthite.
Chalcolite, syn. Uran Mica, Torbernite, Copper Uranite.
Chalcopyrite, see Copper Pyrites.
Chalcostibite, syn. Antimonial Copper Ore.
Chalcotrichite, var. of Cuprite.
Chalk, var. of Calcite.
Chalybite, see Siderite.
Charcoal (Natural).
Chert.
Chiastolite, syn. Cross-Stone (var. of Andalusite.)
Chillagite.
Chlorite.
Chloropal.
Chrome Ochre.
Chrome Spinel, var. of Spinel.
Chromite, syn. Chrome-iron.
Chrysocolla, var. Cyanochalcite.
Chrysolite, see Olivine.
Chrysoprase, var. of Chalcedony.
Chrysotile Asbestos, var. of Serpentine.
Cimolite.
Cinnabar.
Clay, see Kaolin.
Clay Ironstone.
Coal, vars. Anthracite, Semi-bituminous, Bituminous, Cannel, Lignite.
Cobalt Bloom, see Erythrine.
Cobalt Ochre, see Erythrine.
Cobaltiferous Wad, see Asbolane.
Colophonite, var. of Garnet.
Columbite, syn. Niobite.
Cone-in-cone Limestone, var. Calcite.
Copper Glance, see Redruthite.
Copper (Native).
Copperas, syn. Green Vitriol, Melanterite.
Copper Pyrites, syn. Chalcopyrite.
Copper Uranite, see Chalcolite.
Copper (variegated), see Bornite.
Copper Vitriol, see Chalcanthite.
Coralline Limestone.
Corundum—
  (a) Gem varieties :—Pink Sapphire, Ruby, Barklyite, Purple (Oriental Amethyst), Blue, Green (Oriental Peridot and Emerald), Yellow (Oriental Topaz), Orange, Particoloured, Asteria, Oriental Cat's-eye, Oriental Moonstone.
  (b) Corundum varieties :—Black, bluish, bronze, grey, milky, opalescent, pearly, silky.
  (c) Emery.
Covelline, syn. Covellite, Blue Copper .
Crinoidal Limestone, var. of Calcite.
Cross-Stone, see Chiastolite.
Cupreous Anglesite, see Linarite.
Cuprite.
Cyanite, syn. Kyanite.
Cyanochalcite, var. of Chrysocolla.

Dark Red Silver Ore, see Pyrargyrite.
Diallage, var. of Augite.
Dialogite, see Rhodochrosite.
Diamond.
Diatomaceous Earth, see Tripolite (var. of Opal).
Dioptase.
Dogtooth Spar, var. of Calcite.
Dolomite, syn. Bitter Spar, Magnesian Limestone.

Earthy Cobalt, see Asbolane.
Egyptian Jasper.
Emery, var. of Corundum.
Enargite.
Epidote.
Epsomite, syn. Epsom Salts.
Erubescite, see Bornite.
Erythrine, syn. Erythrite, Cobalt Bloom, Cobalt Ochre.
Eulytite.

Fahlerz, see Tetrahedrite.
Fayalite, syn. Iron Chrysolite.
Felspar.
Ferro-calcite, var. of Calcite.
Fibrolite, syn. Sillimanite.
Fiorite, see Siliceous Sinter (var. of Opal).
Fireclay.
Floatstone, var. of Opal.
Fluorspar, syn. Fluorite.
Fontainbleau Sandstone, var. of Calcite.
Foraminiferal Chalk, var. of Calcite.
Fossil Resin, see Retinite.
Fossiliferous Limestone, var. of Calcite.
French Chalk, see Steatite (var. of Talc).
Fulgurites.

Galena, syn. Lead Glance.
Galmei, see Smithsonite.
Garnet, vars. Almandine (syn. Precious Garnet), Andradite, Colophonite, Melanite, Pyrenite, Pyrope (Precious), Grossularite (syn. Essonite).

Minerals of Queensland—*continued:*

List of Synonyms and Varieties. (Adopted names in black type.)

Garnierite, see Noumeaite.
Gismondite, syn. Gismondine.
Glassy Felspar, see Sanidine.
Gold (Native).
Goslarite, syn. White Vitriol, Zinc Vitriol.
Göthite, syn. Goethite.
Graphite, syn. Plumbago, Black Lead.
Grass-stone, see Sagenite (var. of Rutile).
Grey Copper Ore, see Tetrahedrite.
Greenockite, see Cadmium Blende.
Guano.
Gypsum, vars. Alabaster, Selenite, Satin Spar.

Halite, syn. Rock Salt, Common Salt.
Halloysite.
Harmstome.
Heavy Spar, see Barytes.
Heliotrope, see Bloodstone.
Hematite, syn. Specular Iron, Iron Glance (var. Reddle, Red Ochre).
Hemimorphite, see Smithsonite.
Hercynite, syn. Iron Spinel.
Hessite, syn. Telluric Silver.
Heulandite.
Hornblende. Varieties—Actinolite, Tremolite.
Hornstone, var. of Chalcedony.
Hyacinth, var. of Zircon.
Hyalite, syn. Müller's Glass (var. of Opal).
Hyalosiderite, var. of Olivine.
Hypersthene.

Iceland Spar, var. of Calcite.
Ilmenite, syn. Iserine, Menaccanite, Titanic (Titaniferous) Iron.

Ilvaite, see Lievrite.
Infusorial Earth, see Tripolite.
Iridosmine, see Osmiridium.
Iron Chrysolite, see Fayalite.
Iron Glance, see Hematite.
Iron Jasper, var. of Jasper.
Iron Pyrites, syn. Mundic, Pyrites.
Iron Spinel, see Hercynite.
Iserine, see Ilmenite.

Jargoon, var. of Zircon.
Jasp-opal, var. of Opal.
Jasper. Vars.—Brown, Egyptian, Green, Red, Iron, Black (syn. Lydianstone, Touchstone), Porcellanite.
Joseite.

Kalinite, syn. Potash Alum.
Kaolin, syn. China-clay, Kaolinite, Fireclay, Pipeclay.
Kieselguhr, see Tripolite.
Kerargyrite, see Cerargyrite.
Kyanite, syn. Cyanite.

Labrador Felspar, see Labradorite.
Labradorite.
Laumonite.
Lazulite.
Lead Ochre, see Massicot.
Lepidolite, syn. Lithia Mica.
Leucoxene, see Sphene.
Lievrite, syn. Ilvaite.
Lignite, syn. Brown Coal.
Lime-iron Garnet, see Andradite.
Lime Mesotype, see Scolecite.
Limestone, var. of Calcite.
Limonite, syn. Brown Hematite, Brown Iron Ore.
Linarite, syn. Cupreous Anglesite.
Lithia Mica, see Lepidolite.
Lithomarge, var. of Kaolin.
Lithophyses, var. of Chalcedony.
Lollingite, syn. Prismatic Mispickel.
Lydianstone, var. of Jasper.

Magnesian Limestone, see Dolomite.
Magnesite, syn. Brown Spar.
Magnetic Pyrites, see Pyrrhotite.
Magnetite, syn. Magnetic Iron Ore.
Malachite.
Manganese Spar, see Rhodonite.
Magnesia-iron Mica, see Biotite.
Manganite, syn. Grey Oxide of Manganese.
Marble, var. of Calcite.
Marcasite, syn. Prismatic Iron Pyrites, Radiated Pyrites, Secondary Pyrites, Mundic.
Massicot, syn. Lead Ochre.
Matlockite.
Melaconite, see Tenorite.
Melanite, sub-var. of Andradite (var. of Garnet.)
Melanterite, see Copperas.
Menaccanite, see Ilmenite.
Mercury, syn. Quicksilver.
Mesotype, see Natrolite.
Mica, see Biotite, Muscovite.
Mica (Uran), see Chalcolite.
Mimetite, syn. Green Lead Ore.
Mineral Pitch, see Asphaltum.
Minium, syn. Red Lead Ore.
Mispickel, syn. Arsenical Pyrites, Arsenopyrites.
Molybdenite.
Molybdite, syn. Molybdic Ochre, Molybdine.
Monazite.
Müller's Glass, see Hyalite.
Mundic, see Pyrites, Marcasite, Copper Pyrites.
Muscovite, syn. Potash Mica, Common White Mica.

Nail-head Spar, var. of Calcite.
Natrolite, syn. Mesotype.
Natural Gas.
Nepheline.
Niobite, see Columbite.
Noble Serpentine, var. of Serpentine.
Noumeaite, syn. Garnierite.

Oligoclase.
Olivenite, syn. Olive Copper Ore.
Olivine, syn. Peridot, Chrysolite.
Onyx, var. of Chalcedony.
Oolitic Limestone.

Minerals of Queensland—*continued*:

List of Synonyms and Varieties. (Adopted names in black type.)

Opal. Vars.—Siliceous Sinter (syn. Fiorite, Geyserite), Floatstone, Hyalite, Tripolite (syn. Diatomaceous Earth, Kieselguhr), Black Opal, Precious Opal, Common Opal, Wood Opal, Semi-Opal, Jasp-Opal.
Orthoclase, syn. Potash Felspar, var. Sanidine (syn. Glassy Felspar).
Osmiridium, syn. Iridosmine.
Ottrelite.
Ozokerite, syn. Mineral Wax.

Parian Marble, see Alabaster.
Penninite, var. Rhodochrome.
Phacolite, var. of Chabazite.
Picotite, var. of Spinel.
Pinite.
Pipeclay, var. of Kaolin.
Pitch, see Asphaltum.
Pitchblende, syn. Uraninite.
Platinum.
Pleonaste, var. of Spinel.
Plumbago, see Graphite.
Porcelain Clay, var. of Kaolin.
Porcellanite, syn. Porcelain Jasper.
Potash Alum, see Kalinite.
Potash Felspar, see Orthoclase.
Potash Mica, see Muscovite.
Prase, var. of Chalcedony.
Prehnite.
Prosopite.
Proustite, syn. Ruby Silver Ore.
Psilomelane.
Pyrargyrite, syn. Dark Red Silver Ore.
Pyreneite, var. of Andradite, sub-var. of Garnet.
Pyrites, see Iron Pyrites.
Pyrolusite.
Pyromorphite.
Pyrope, var. of Garnet.
Pyrrhotite, syn. Pyrrhotine, Magnetic Pyrites.

Quartz. Varieties—Amethyst, Cairngorm, Rock Crystal, Rose Quartz, Smoky Quartz.
Quicksilver, see Mercury.

Radiated Pyrites, see Marcasite.
Redruthite, syn. Chalcocite, Cop. Glance.
Red Ochre, var. of Hematite.
Resin Tin, var. of Cassiterite.
Reddle, var. of Hematite.
Rhodochrome, var. of Penninite.
Retinite, syn. Fossil Resin.
Rhodochrosite, syn. Dialogite.
Rhodonite, syn. Manganese Spar.
Rock Crystal, var. of Quartz.
Rock Salt, see Halite.
Rose Quartz, var. of Quartz.
Rubellite, var. of Tourmaline.
Ruby, var. of Corundum.
Ruby Silver Ore, see Proustite.
Ruby Tin, var. of Cassiterite.
Rutile.

Sagenite, var. of Rutile.
Sal-ammoniac.
Salt, see Halite.
Sanidine, syn. Glassy Felspar, var. of Orthoclase.
Saponite.
Sapphire, var. of Corundum.
Sard, see Carnelian.
Sardonyx, var. of Chalcedony.
Satin Spar, var. of Gypsum.
Scapolite, syn. Wernerite.
Scheelite.
Schorl, var. of Tourmaline.
Scolecite, syn. Lime Mesotype.
Scorodite.
Secondary Pyrites, see Marcasite.
Selenite, var. of Gypsum.
Semi-anthracite, var. of Coal.
Semi-Opal, var. of Opal.
Serpentine, var. Chrysotile Asbestos.
Siderite, syn. Chalybite (var. Sphaero-siderite.
Siliceous Sinter, syn. Fiorite, Geyserite, var. of Opal.
Sillimanite, syn. Fibrolite.
Silver (Native).
Smithsonite, syn. Galmei, Hemimorphite, Calamine (Dana).
Smoky Quartz, var. of Quartz.
Soapstone, see Steatite.
Soda Felspar, see Albite.
Specular Iron, see Hematite.
Sphalerite, see Zinc Blende.
Sphaero-siderite, var. of Siderite.
Sphene, syn. Leucoxene, Titanite.
Spicular Earth, var. of Opal.
Spinel. Varieties — Almandine, Picotite (syn. Chrome Spinel), Pleonaste (syn. Ceylonite).
Stalactite, var. of Calcite.
Stalagmite, var. of Calcite.
Stannite, syn. Stannine, Tin Pyrites.
Staurolite, syn. Staurotide.
Steatite, syn. French Chalk (var. of Talc).
Stephanite.
Stibnite, syn. Antimony Glance.
Stilbite.
Stream Tin, see Cassiterite.
Strontianite.
Strontiano-Calcite, var. of Calcite.
Sulphur (Native).

Tabular Spar, see Wollastonite.
Talc, var. Steatite (syn. Soapstone, French Chalk).
Tantalite.
Tenorite, syn. Melaconite, Black Copper.
Tetradymite, syn. Telluric Bismuth.
Tetrahedrite, syn. Fahlez, Grey Copper Ore.
Thompsonite.
Thulite, see Zoicite.
Tile Ore, var. of Cuprite.
Tin Pyrites, see Stannite.
Titanic Iron, see Ilmenite.
Titanite, see Sphene.
Toad's-eye Tin, var. of Cassiterite.

Minerals of Queensland—*continued:*

List of Synonyms and Varieties. (Adopted names in black type.)

Topaz.
Torbernite, see Chalcolite.
Touchstone, see Black Jasper.
Tourmaline. Varieties—Rubellite, Schorl.
Travertine, var. of Calcite.
Tremolite, var. of Hornblende.
Tripolite, syn. Diatomaceous Earth, Kieselguhr, Infusorial Earth (var. of Opal).
Tufa, var. of Calcite.
Tungstite, syn. Tungstic Ochre.
Turgite, syn. Hydrohematite.
Turquoise.

Uraninite, see Pitchblende.
Uran-Mica, see Chalcolite.

Valentinite.
Variegated Copper Ore, see Bornite.
Vermiculite.
Viridite.
Vivianite, syn. Blue Iron Earth.

Wad.
Websterite, syn. Aluminite.
Wernerite, see Scapolite.
White Arsenic, see Arsenolite.
White Mica, see Muscovite.
White Sapphire (so-called), see Topaz.
White Vitriol, syn. Goslarite.
Willemite.
Witherite.
Wolfram, syn. Wolframine.
Wollastonite, syn. Tabular Spar.
Wood-Opal, var. of Opal.
Wood-Tin, var. of Cassiterite.
Wulfenite.

Yellow Ochre, var. of Limonite.

Zinc Blende, syn. Sphalerite, Black Jack, Blende.
Zinc Vitriol, syn. Goslarite.
Zircon, var. Hyacinth.
Zoicite, syn. Thulite.

Mines Department. *See under* Department of Mines for details.

—— —— Officials. *See* list of Classified and Unclassified Officers in the Public Service, published annually. Contains particulars of age, appointment, salaries, etc.

—— Inspectors. *See* Inspectors of Mines.

Mines Regulation Bill (Q'land). *See under* Govt. Ming. Jour., Report No. 110. *See also below under* Mining Acts.

Mingo (Por. 5v), N.W. of Degilbo. *Min.Ref.* Manganese-dioxide, *see* 6395; Rhodonite, 7318.

Mining Acts, and Regulations thereunder.

(By Authority, Gov. Printer, Brisbane, 1911, pp. 310.) (Pamphlet.)

SYNOPSIS:

Mining Act of 1898 (62 Vic. No. 24).
Mining Act Amendment Act of 1901 (1 Edw. VII. No. 10).
Mining Act Amendment Act of 1902 (2 Edw. VII. No. 24).
Regulations under the Mining Act of 1898.
Mining on Private Land Act of 1909 (9 Edw. VII. No. 15).
Regulations under the Mining on Private Lands Act of 1909.
Mines Regulation Act of 1910 (1 Geo. V. No. 24).
Mining Machinery Advances Act of 1906 (6 Edw. VII. No. 10).
Regulations under the Mining Machinery Advances Act of 1906.

Copies of the Act are obtainable at Mines Department, Brisbane; at Government Printing Office, Brisbane; and at Wardens' Offices in country districts.

Mining and Geological Reports and Plans. *See* Publications *under* Geological Survey of Queensland.

—— Dredges. *See under* Dredges.

Mining Fields of Queensland. *See under* Antimony, Coal, Copper, Gold, Opal, Sapphire, Silver-Lead, Tin, and Wolfram.

—— Inspectors. *See* Inspectors of Mines.

Mining Journal (Queensland Government). *See under* Government Mining Journal.

—— Laws (Royal Commission on). *See under* Royal Commissions.

Mining Machinery and Advances Act, 1906. The object of this Act is to permit of money being borrowed from the Government for the purpose of procuring and erecting mining and metallurgical machinery and plant. Half the total cost has to be contributed by the borrower, and interest has to be paid on the amount advanced at the rate of 5 per cent. per annum. The prescribed form, and a copy of the Act, giving the conditions to be fulfilled, may be obtained at the Mines Department, Brisbane.

Mining Machinery in Queensland, 1911. (Value of, on each Mining Field) :—

	£		£
Alice River	800	Herberton	214,900
Biggenden	4,500	Horse Cr. & Rocky	1,100
Bowen	2,165	Innisfail	1,000
Charters Towers & Cape River	300,000	Kangaroo Hills	7,000
		Mackay	300
Chillagoe	181,064	Mt. Morgan	777,495
Clermont	21,630	Mt. Perry	38,700
Cloncurry	169,390	Nanango	1,000
Coen	2,700	Normanby	1,200
Cooktown	10,000	Palmer	1,900
Croydon	110,700	Possession Islands	800
Eidsvold	7,500	Ravenswood	108,310
Etheridge, Woolgar, &c.	30,610	Rockhampton	128,675
Gladstone	34,998	Stanthorpe	20,560
Gympie	133,933	Starcke	2,200
Hamilton	2,000	Warwick	3,000

—— Manager's Certificates. *See under* Board of Examiners for Mining Managers.

Ministers for Mines (list of). *See* Secretaries for Mines.

Minium. *Syn.* Red Lead Ochre. *Compo.*, Oxide of lead. *Colour,* usually bright red. *Streak,* orange-yellow. Opaque. *H.* = 2·3; *Sp.gr.* = 4·6. *Contents* (*max.*), Lead 90 per cent.

6575. ——. *Assoc.with* Hematite, in black slate. *Loc.* Dugald Mine, Dugald R., 45 miles N.W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 3 (1885).

6576. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and Limonite, in quartz. *Loc.* Eureka Reef, 1 mile from Flanagan's, 13 miles E.byS. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 35, p. 11 (1887).

6577. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Cerussite, and Pyromorphite, in quartz reefs. *Loc.* Tabletop, 8 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 113, p. 348 (1896).

6578. ——. *Assoc.with* Gold and Silver, in lode. *Loc.* Allendale Silver Lode, 1½ mile of Chowey Cr., 6 miles N.W. of Chowey Rail. Stn. (Gayndah line), 68 miles (by rail and road) W. of Maryborough. *Co.* Bowen (Cook?); *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

6579. ——. *Assoc.with* Ironstone. *Loc.* Rose and Thistle Silver Lode, ½-mile down Didcot Cr., E. of Mt. Melville, 2½ miles N. of Chowey Rail. Stn. (Gayndah line), 64 miles (by rail and road) W. of Maryborough (*ante*). *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

6580. ——. As a secondary deposit. *Loc.* Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

6581. ——. *Assoc.with* Cuprite, Tetrahedrite, Malachite, and Hematite. *Loc.* Mollie Lease, Marble Cr., Calcifer, 132 miles (by rail) W.S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assays: See* No. 2435. *Ref.* G.S.Q. Pub. 69, p. 8 (1891).

6582. ——. *Assoc.with* Cerussite, in gossan. *Loc.* Arbouin and party's P. Area, Dargalong, 7 miles S. of Zillmanton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

6583. ——. *Assoc.with* Galena and Anglesite, in gossan. *Loc.* Chillagoe Queen Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

6584. ——. *Assoc.with* Anglesite, Cerussite, and Hematite, in lode. *Loc.* Excelsior Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

6585. ——. *Assoc.with* Copper carbonate and Cerussite, in ferruginous gossan. *Loc.* Johnson and Smyth's Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

6586. ——. *Assoc.with* Massicot, Anglesite, Galena, Cerussite, Copper carbonate, in lode. *Loc.* Pandora Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

6587. ——. *Assoc.with* Cerussite and Galena, in ferruginous clay. *Loc.* P.A. (40 acres), Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

6588. ——. *Assoc.with* Cerussite, in lode. *Loc.* Silver Crown Mine, Dargalong (*ante*). *Ref.* G.S.Q. Pub. 69, p. 10 (1891).

6589. ——. As a secondary deposit. *Loc.* Muldiva Silver-Lead Mines, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

6590. ——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, Malachite, Galena, Cerussite, Zinc Blende, Hematite, and Garnet. *Loc.* Penzance Mine, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), 152 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 6 (1891), and 134, p. 11 (1898).

6591. ——. *Assoc.with* Cerussite and Galena, in limestone. *Loc.* Queenslander Copper Mine, Redcap Cr. (*ante*). *Assay:* Silver = from 30 oz. to 200 oz. per ton. *Ref.* G.S.Q. Pub. 69 p. 7 (1891).

6592. ——. *Assoc.with* Cerussite, Copper Carbonate, and Limonite, in lode in slate, greywacke, and quartzite. *Loc.* Monte Video Mine, between Ashton and Bowler Creeks, 3 miles E. of Ashtonville, 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mnieral Fields. *Co.* Wrotham; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 15 (1898).

6593. ——. *Assoc.with* Gold, Mispickel, and Galena, in quartz. *Loc.* Min. Area (25), Jibbinbar, 20½ miles S.byW. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Assays:* *See* No. 2830. *Ref.* G.S.Q. Pub. 87, p. 10 (1892).

6594. ——. *Assoc.with* Silver, Galena, Anglesite, and Malachite. *Loc.* Koh-i-noor Silver-Lead Mine, Coolgarra, 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Assay:* Silver = 500 oz. per ton. *Yield:* Silver = 94 oz. per ton; Lead = 40 per cent. *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

6595. ——. *Assoc.with* Galena and Anglesite, in quartz. *Loc.* Tucker's Silver-Lead Lode, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

6596. ——. *Assoc.with* Galena, Chalcanthite, Anglesite, Massicot, and Limonite, in slate. *Loc.* John Bull Mine, Dry R., br. of Wild (Upper Herbert) R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 32 (1883).

6597. ——. *Assoc.with* Argentite, Liderite, and Galena. *Loc.* Target Silver Mine, Dry R. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 46 (1887).

6598. ——. *Assoc.with* Gold, Silver, Cerussite, Iron Pyrites, Hematite, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, Mispickel, Zinc Blende, and Chalcanthite, in quartz lodes in quartzite and porphyry. *Loc.* Mt. Garnet Mine, Return Cr., 136 miles (by rail) S.W. of Cairns. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

6599. ——. *Assoc.with* Magnetite and Manganese-dioxide, in lode. *Loc.* Black Star S. Lease (199), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 82, p. 6 (1892).

6600. ——. *Assoc.with* Cerussite, in lode. *Loc.* Mt. Moss Extd. Lease (169) (Queen Lode), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 4 (1892).

6601. ——. In quartzite. *Loc.* White Star Lease (160), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 5 (1892).

6602. ——. *Assoc.with* Galena, Cerussite, Chrysocolla, Copper carbonate, Zinc Blende, and Hematite, in gossan lode. *Loc.* White Wings P.A., Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

6603. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Albion Mine, Star R. (Argentine) Mineral Field, 40 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

6604. ——. *Assoc.with* Galena, Anglesite, Cerussite, Pyromorphite, and Limonite, in lode. *Loc.* Alpha Silver-Lead Mine, Star. R. (Argentine) Mineral Field (*ante*). *Assay:* Lead = 79 per cent.; Silver = 107 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

6605. ——. *Assoc.with* Galena and Ironstone, in lode. *Loc.* Ard Righ Mine, Star R. (Argentine) Mineral Field (*ante*). *Assay:* Lead = 61 per cent.; Silver = 57 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

6606. Minium. *Assoc.with* Cerussite in lode. *Loc.* Ben Lomond Silver Mine, Star R. (Argentine) Silver Field (*ante*). *Assay:* Lead = 27 per cent.; Silver = 234 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 7 (1886).

6607. ——. *Assoc.with* Anglesite, Cerussite, Massicot, and Ironstone, in lode. *Loc.* Bonanza Silver Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

6608. ——. *Assoc.with* Lead Ochre and Ironstone, in quartz and slate. *Loc.* Bonanza North Mine, Star (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

6609. ——. *Assoc.with* Cerussite, in lode. *Loc.* Cleopatra Silver-Lead Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q., Pub. 26, p. 2 (1886).

6610. ——. *Assoc.with* Galena, Cerussite, Copper Pyrites, Malachite, Manganese-dioxide, Mispickel, Ironstone, and Iron Ochre. *Loc.* Colorado Silver-Lead Mine, Star R. Mineral Field (*ante*). *Assay:* Silver = 114 oz. per ton; Lead = 62 per cent. *Ref.* G.S.Q. Pub. 26, p. 7 (1886).

6611. ——. *Assoc.with* Galena and Cerussite, in gossan. *Loc.* Crœsus Silver-Lead Mine, Star R. Mineral Field (*ante*). *Assay:* (1886).

6612. ——. *Assoc.with* Anglesite, Cerussite, and Ironstone, in ferruginous rock. *Loc.* Eureka Silver-Lead Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

6613. ——. *Assoc.with* Galena, Anglesite, and Ironstone. *Loc.* Hero Silver Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, pp. 2, 3 (1886).

6614. ——. *Assoc.with* Cerussite and Anglesite, in lode. *Loc.* Humphrey and Co.'s Silver-Lead Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

6615. ——. *Assoc.with* Galena, Cerussite, Massicot, and Ironstone, in lode. *Loc.* John Bull Silver Mine, Star R. (Argentine) Silver Field (*ante*) *Assay: See* No. 2986. *Ref.* G.S.Q. Pub. 26, p. 3 (1886).

6616. ——. *Assoc.with* Cerussite and Ironstone, in lode. *Loc.* Jones's Sel. (139), Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

6617. ——. *Assoc.with* Cerussite [and Anglesite], in lode. *Loc.* Lady Annie Silver-Lead Mine, Star R. (Argentine) Silver Field (*ante*). *Assays:* Lead = 69 per cent. and 59 per cent.; Silver = 186 oz. and 166 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 3 (1886), and G.S.M.

6618. ——. *Assoc.with* Cerussite and Ironstone. *Loc.* Morrison and Co.'s Sel. (165), Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

6619. ——. *Assoc.with* Lead, Gossan, and Ironstone, in lode. *Loc.* Morrison and Co.'s Sel. (166), Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

6620. ——. *Assoc.with* Galena and Cerussite, in lode. *Loc.* Nonpareil Silver-Lead Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

6621. ——. *Assoc.with* Cerussite and Anglesite, in quartz and schist lode. *Loc.* Northbrook (A. Beazley's) Sel. (179), Star R. (Argentine) Silver Field (*ante*). *Assays:* Silver = 108 oz. and 69 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

6622. ——. *Assoc.with* Galena, Cerussite, and Ironstone, in gossan lode. *Loc.* Overlander Silver-Lead Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

6623. ——. *Assoc.with* Cerussite, in gossan. *Loc.* P.F. Hanran Silver Sel., Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

6624. ——. *Assoc.with* Galena and Cerussite. *Loc.* Prince of Wales Silver-Lead Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

6625. ——. *Assoc.with* Cerussite and Malachite, in gossan lode. *Loc.* Royal Standard Silver Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

6626. ——. *Assoc.with* Galena, Cerussite, Anglesite, and Ironstone. *Loc.* St. John's Lease, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

6627. ——. *Assoc.with* Galena, Anglesite, and Hematite, in quartz. *Loc.* Struck Oil Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

6628. ——. *Assoc.with* Galena, Anglesite, and Cerussite, in ferruginous rock. *Loc.* True Blue Silver-Lead Mine, Star R. (Argentine) Silver Field (*ante*). *Assay:* Lead = 72 per cent., Silver = 68 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. (3) (1886), and G.S.M.

6629. ——. *Assoc.with* Gold, Iron Pyrites, Anglesite, Cerussite, Zinc Blende, and Siderite, in quartz and gossan lode. *Loc.* Union Silver-Lead Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886), and G.S.M.

6630. ——. *Assoc.with* Galena, Anglesite, and Cerussite, in sandstone. *Loc.* Venture Mine, Star R. (Argentine) Mineral Field (*ante*). *Assays:* Lead = 60 and 68 per cent., Silver = 69 and 82 oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

6631. ——. *Assoc.with* Galena, Cerussite, Anglesite, and Ironstone, in ferruginous gossan. *Loc.* Washington 1 and 2 Silver Mines, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 4 (1886).

6632. ——. *Assoc.with* Cerussite and Mispickel, in veins. *Loc.* Long Hill Gold and Silver Mine, Star R. (Argentine) Silver Field (*ante*). *Ref.* G.S.Q. Pub. 26, *Dist.* **Kennedy South.** *Assays: See* No. 1287. *Ref.* G.S.Q. Pub. 39, pp. 9, 10 (1887).

6633. ——. *Assoc.with* Galena, Cerussite, Iron Pyrites, Copper Pyrites, and Zinc Blende, in clay lode. *Loc.* General Gordon Mine, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Assay: See* No. 1289. *Ref.* G.S.Q. Pub. 57, p. 6 (1889).

6634. ——. *Assoc.with* Galena, Cerussite, and Clay, in lode in slate. *Loc.* New Year's Gift Mine, Two-mile Cr., Sellheim Mineral Field (*ante*). *Assay: See* No. 1290. *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

6635. ——. *Assoc.with* Galena, Anglesite, Cerussite, Iron Pyrites, and Ironstone, in lode. *Loc.* Pyramid Silver Lode, Sellheim Mineral Field (*ante*). *Assays: See* No. 1291. *Ref.* G.S.Q. Pub. 57, pp. 2, 3 (1889).

6636. ——. *Assoc.with* Silver, Galena, Cerussite, Iron Pyrites, Ironstone, and Zinc Blende, in lode. *Loc.* Rob Roy Mine, Sellheim Mineral Field (*ante*). *Assays: See* No. 3017. *Ref.* G.S.Q Pub. 57, p. 4 (1889).

6637. ——. *Assoc.with* Silver, Galena, and Cerussite, in lode. *Loc.* Silver King Mine, Sellheim Mineral Field (*ante*). *Assay: See* No. 1293. *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

6638. ——. *Assoc.with* Galena, in gossany quartz. *Loc.* Stackpool's Lease, Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

6639. ——. *Assoc.with* Gold, Galena, and Mispickel. *Loc.* Venture Silver Mine, Sellheim Mineral Field (*ante*). *Assays: See* No. 4147. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

6640. ——. *Assoc.with* Galena and Cerussite, in veins of quartz in sandstone. *Loc.* Reefs, E. of Mt. Clarke, Mt. Britton Goldfield, 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 39, p. 6 (1887).

6641. ——. *Assoc.with* Gold, Silver, Tile Ore, Copper carbonate, and Steatite, in quartz lode. *Loc.* 4 miles N.W. of junction of Tierawoomba and Boothill Creeks, 50 miles S.S.W. of Mackay. *Co.* Wodehouse (*ante*). *Assay: See* No. 7505. *Ref.* G.S.Q. Pub. 39, p. 7 (1887).

6642. ——. *Assoc.with* Bismuthinite, Bismutite, and Malachite, and Gold (trace). *Loc.* Mt. Samford, Enoggera Ranges, 6½ miles W. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 159, p. 18 (1901).

6643. ——. *Assoc.with* Gold, Silver, Anglesite, Cerussite, Galena, Hematite, Limonite, and Massicot, in lode. *Loc.* Bompa Silver-Lead Mines, Glassford Cr., about 2 miles W.byS. of Littlemore Rail. Stn. (Boyne-Valley line), 53 miles (by rail and road) S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 159, p. 7 (1901).

——. *See also* Lead Oxide.

Minnie Cr., nr. Bonnie Doon Stn., N.W. of Blackwater. *Min.Ref.* Chromite, *see* 1474.

—— Downs Sub-artesian Bore. *See under* Artesian Bores. No. 339.

—— Moxham Mine, Northcote, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3759; Stibnite, 7622.

Mint Mine, Lucky Downs Diggings. *Min.Ref.* Gold, *see* 3879A.

Mirani, 22 miles (by rail) W. of Mackay. *Lat.*, 21° 10′ S.; *Long.*, 148° 55′ E. *Min.Ref.* Clay, 1574; Strontianite, *see* 7665; Zircon, 8224.

Miriam Vale, 43 miles (by rail) S.E.byS. of Gladstone. *Lat.*, 24° 19′ S.; *Long.*, 151° 33′ E. *Min.Ref.* Felspar, *see* 2647; Hematite, 4789; Hornblende, 4844; Malachite, 6363.

Geological Note: The prevailing country rock is granite. Some miles to the west there are deposits of Tertiary (?) sandstones and shales containing an oil-bearing or resin-bearing shale, similar in composition to that found at Duaringa, *which see.*

Misima, Brit. New Guinea. *See* St. Aignaus Is.

Mispickel. *Syn.* Arsenical Pyrites. Arsenopyrite. *Compo.*, Arseno-sulphide of iron. *Colour*, whitish or greyish. Metallic. *Streak*, greyish-black. *H.* = 5·5-6. *Sp.gr.* = 6·0-6·4. *Contents* (*max.*), Arsenic 46 per cent.

6644. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, and Galena, in granite. *Loc.* Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 202, p. 10 (1905).

6645. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Happy Jack Reef, Tabletop, 9 miles N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 35 (1896).

6646. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Galena, and Zinc Blende, in lode. *Loc.* Allendale Silver Mine, ½-mile up Chowey Cr., nr. Mt. Shamrock, 6 miles N.W. of Chowey Rail. Stn. (Gayndah line), 68 miles (by rail and road) W. of Maryborough. *Co.* Bowen; *Dist.* **Burnett.** *Assay: See* No. 3567.. *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

6647. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites. *Loc.* Mt. Ophir Mine, Mt. Ophir, Chowey Cr., 62 miles (by rail) W. of Maryborough. *Co.* Bowen (*ante*). *Ref.* A.R., p. 158 (1908).

6648. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in felsite. *Loc.* Achillea Mine, Gebangle Goldfield, 3 miles up Yarrabil Cr., 12 miles N.W. of Degilbo Rail. Stn. (Gayndah line), 70 miles (by rail and road) W. of Maryborough. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 60, p. 5 (1890), and G.S.M.

6649. ——. *Assoc.with* Gold and Iron Pyrites, in porphyry. *Loc.* Gebangle P.C., ridge nr. Yarrabil Cr., Gebangle Goldfield (*ante*). *Ref.* G.S.Q. Pub. 60, p. 5 (1890).

6650. ——. *Assoc.with* Gold and Iron Pyrites, in quartz and. calcite. *Loc.* Caledonia Reef, Reid's Cr. Goldfield, 4½ miles S.W. of Mt. Perry Rail. Stn., 71 miles (by rail and road) S.W.byS. of Bundaberg. *Ref.* G.S.Q. Pubs. 21, p. 11 (1885), 125, p. 28 (1897).

6651. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* California Reef, Reid's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885), and G.S.M.

6652. ——. *Assoc.with* Iron Pyrites, Galena, and Stibnite. *Loc.* Lady Norman and Reid's Cr. Mines, Reid's Cr. Goldfield (*ante*). *Contents:* Gold = 2·25 oz. to 5·05 per ton. *Ref.* A.R.D.M., p. 34 (1894).

6653. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Stibnite, and Zinc Blende, in quartz and felsite. *Loc.* Reid's Cr. Reefs, Branch Cr., Reid's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885).

6654. ——. *Assoc.with* Gold and Silver, in quartz reef. *Loc.* Three miles S. of Mt. Perry, on Eidsvold Road. *Co.* Bowen; *Dist.* Burnett. *Assay:* Gold = 8 dwt., Silver = 13 dwt. 14 gr. per ton of ore. *Ref.* A.R., p. 158 (1908).

6655. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Magnetite, Native Bismuth, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Erythrine, Viridite, Actinolite, Calcite, Chalcedony, and Epidote. *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58½ miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 60, p. 2 (1890), 173 (1902), 194 (1904).

6656. ——. *Assoc.with* Copper Pyrites, Bismite, and Calcite, in lode. *Loc.* In Shaft, 1 mile N.N.E. of Mt. Biggenden (*ante*). *Ref.* G.S.Q. Pub. 60, p. 3 (1890).

6657. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Cuprite, Tenorite, Malachite, Iron Pyrites, Hematite, Bismuthinite, Pyrrhotite, Zinc Blende, and Calcite, in quartz reef. *Loc.* Commonwealth Copper Mine, Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), 207, pp. 14-19 (1907).

6658. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Native Bismuth, Bismuthinite, Magnetite, and Ironstone, in lode. *Loc.* Don Jon Bismuth Mine, Mt. Havilah (*ante*). *Ref.* G.S.Q. Pubs. 173, p. 4 (1902), 207, pp. 13, 14 (1907).

6659. ——. *Assoc.with* Gold, Iron Pyrites, Bismuthinite, and Bismutite, in breccia. *Loc.* Kent's Knob Mine, ¼-mile N.W. of Mt. Shamrock, 63 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 25, p. 2 (1886), and B.D.

6660. ——. *Assoc.with* Native Gold, Telluride of Gold, Native Bismuth, Joseite, Bismuthinite, Molybdenite, Copper Pyrites, Malachite, Zinc Blende, and Calcite, in syenite [diorite], volcanic tuff, and breccia. *Loc.* Mt. Shamrock Mine, 5½ miles W.N.W. of Degilbo, 63 miles (by rail and road) W. of Maryborough (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 60, p. 6 (1890), 125 (1897), 168, pp. 4-8 (1901), and B.D.

6661. ——. *Assoc.with* Copper Pyrites, Tenorite, Iron Pyrites, and Galena, in quartz and calcite. *Loc.* Gympie Copper Mines, Ltd., P. Area No. 2, Gooroomjam Cr., 23 miles N.N.E. of Nanango Rail. Stn., 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Assays: See* No. 2139. *Ref.* G.S.Q. Pub. 169, p. 10 (1901).

6662. ——. *Assoc.with* Gold, Silver, and Iron Pyrites, in quartz lode. *Loc.* Auburn Falls Gold Mine, junction of Cardarga Cr. and Auburn R., 32 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 207, p. 11 (1907), and A.R., p. 56 (1906).

6662A. ——. *Assoc.with* Gold, Iron Pyrites, Limonite, and Manganese-dioxide, in quartz. *Loc.* Cadarga Cr. Gold Mines, between Cadarga Cr. and Auburn R., 33 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle (*ante*). *Ref.* Q.G.M.J., vol. 5, pp. 162, 163 (1904), and G.S.Q. Pub. 207, p. 11 (1907).

6663. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* Cosmopolitan Lease (42), Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 102, p. 3 (1895).

6664. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in quartz. *Loc.* Mt. Rose P.C., Mt. Rose Reef, Eidsvold Goldfield (*ante*). *Ref.* G.S.M.

6665. ——. *Assoc.with* Gold and Galena, in quartz reef. *Loc.* E. side of Burnett R., Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 43, p. 5 (1887).

6666. ——. *Assoc.with* Cassiterite, Tourmaline, and Chlorite, in quartz. *Loc.* Dodd's Lode Claim, Byer's Gully, trib. of Jones's Cr., Rossville, 26 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

6667. ——. *Assoc.with* Cassiterite, Wolfram, and Tourmaline, in talcose quartz. *Loc.* Gladstone Tin Mine, Mt. Amos, about 20 miles S.S.E. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 9 (1891).

6668. ——. *Assoc.with* Wolfram, Cassiterite, Tourmaline, and Talc, in quartz. *Loc.* Mt. Amos Tin Mine, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub. 35, p. 15 (1887).

6668A. ——. *Assoc.with* Iron Pyrites and Cobalt, in quart lode. *Loc.* Asmus Claim, Mt. Hartley, head of Wallaby Cr., 4 miles E. of Rossville, 26 miles S.S.E. of Cooktown. *Co.* Banks; *Dist.* Cook. *Ref.* A.R., p. 199 (1909).

6669. ——. *Assoc.with* Cassiterite, Wolfram, Tourmaline, and Felspar, in quartz. *Loc.* Wright's Lease (99), Black Prince Lode, Mt. Hartley (*ante*). *Ref.* G.S.Q. Pub. 66, p. 7 (1891).

6670. ——. *Assoc.with* Cassiterite, Iron Pyrites, and Tourmaline, in talc. *Loc.* Collingwood Tin Lease (81), E. side of Mt. Leswell, 1½ mile S.S.W. of Rossville, about 26 miles S. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 66, p. 4 (1891).

6671. ——. *Assoc.with* Cassiterite and Tourmaline, in quartz. *Loc.* Cahill Bros.' Lease (89), Jones's Cr., E. side of Mt. Leswell (*ante*). *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

6672. ——. *Assoc.with* Cassiterite, Mica, Felspar, and Tourmaline, in decomposed rock. *Loc.* Harris and Party's Tin Lease, Rossville, 25 miles S. of Cooktown. *Co.* Banks; *Dist.* Cook. *Ref.* G.S.Q. Pub. 35, p. 16 (1889).

6672A. ——. *Assoc.with* Gold, in quartz. *Loc.* St. Patrick Workings, in Starcke Consols Lease (23), Munburra, 40 miles N.N.W. of Cooktown, Starcke Goldfield. *Co.* Banks (*ante*). *Ref.* G.S.Q. Pub. 223, p. 41 (1909).

6673. ——. *Assoc.with* Gold, in quartz. *Loc.* German Miner Reef, Limestone, 60 miles S. of Laura Rail. Stn. (Cooktown line), 127 miles (by rail and road) S.W. of Cooktown, Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.Q. Pub. 46, p. 2 (1889).

6674. ——. *Assoc.with* Gold, in quartz. *Loc.* Good Hope Reef, Limestone (*ante*). *Ref.* G.S.Q. Pub. 46, p. 2 (1889).

6675. ——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* Mt. Madden, Oakey Cr., 13 miles S.E.byS. of Maytown, Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 108, p. 11 (1896), 123, p. 8 (1897).

6676. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Long Tunnel Mine, Coen Goldfield, 45 miles (by road) N.N.W. of Port Stewart, 189 miles N.W. of Cooktown. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.Q. Pub. 163, p. 21 (1901).

6677. ——. *Assoc.with* Gold, in quartz. *Loc.* Wilson Mine, Coen Goldfield (*ante*). *Ref.* G.S.Q. Pub. 163, p. 19 (1901).

6678. ——. *Assoc.with* Galena, in quartz. *Loc.* Rothwell Reef, about 9 miles (by road) S.E. of Coen, about 54 miles (by road) N.N.W. of Port Stewart. *Co.* Coen; *Dist.* Cook. *Ref.* O.R.

6679. Mispickel. *Assoc.with* Galena and Massicot, in quartz. *Loc.* Ebagoola, Hamilton Goldfield, 33 miles W. of Port Stewart, 173 miles N.W.byW. of Cooktown. *Co.* Coen (*ante*). *Ref.* O.R.

6680. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Galena, in quartz and calcite. *Loc.* Balmoral Reef, Castleton, 5 miles S.S.E. of Charleston Rail. Stn., Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), 151, p. 12 (1900).

6681. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Galena, and Zinc Blende, in quartz reef. *Loc.* Nil Desperandum Mine, Charleston, 140 miles (by rail) S.W. of Almaden Rail. Stn. (Etheridge line), Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), 219, p. 14 (1909).

6682. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Papa Reef, Georgetown, 20 miles N. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 3 (1887).

6683. ——. *Assoc.with* Gold, in quartz. *Loc.* Caledonia Reef, 5½ miles S.W. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 4 (1887).

6684. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Just-in-Time Reef, Northcote, 15 miles W. of Mareeba Rail. Stn. (Cairns line), 61 miles (by rail and road) W. of Cairns, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 28 (1885).

6685. ——. *Assoc.with* Gold, in quartz. *Loc.* Captain Cook Reef, Woodville, 9 miles N.W.byW. of Thornborough, Hodgkinson Goldfield (*ante*). *Ref.* G.S.Q. Pub. 16, p. 22 (1884).

6686. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Union Reef, Woodville, 13 miles N.W. of Thornborough, Hodgkinson Goldfield (*ante*). *Ref.* G.S.Q. Pub. 16, p. 24 (1884), and P.R.S.Q., vol. 4, p. 47 (1887).

6687. ——. *Assoc.with* Scorodite, Wolfram, Cassiterite, Molybdenite, Native Bismuth, and Bismutite, with traces of Copper Pyrites, Cuprite, Tenorite, Malachite, Azurite, Iron Pyrites, Hematite, etc., in irregular masses of quartz and greisen in granite. *Loc.* Boonmoo Mine, 81 miles (by rail) S.W. of Cairns (Chillagoe line), **Walsh and Tinaroo Mineral Fields.** *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

6688. ——. *Assoc.with* Cassiterite, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Consolidated Tin Mine, 4½ miles N.E. of Montalbion, 11 miles (by rail and road) S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

6689. ——. *Assoc.with* Silver, Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in lode. *Loc.* Tornado Mine, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Analysis: See* No. 2155. *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

6690. ——. *Assoc.with* Iron Pyrites, Cassiterite, Wolfram, Scheelite, and Copper carbonate, in diorite dyke. *Loc.* Chance Tin Mine, Watsonville, head of James's Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 119, p. 18 (1897), 125, p. 40 (1897).

6691. ——. *Assoc.with* Copper Pyrites, Cassiterite, and Orthoclase, in quartz. *Loc.* Gt. Western Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 27 (1883).

6692. ——. *Assoc.with* Copper Pyrites, in diorite. *Loc.* King of the North Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 25 (1883).

6692A. ——. *Assoc.with* Cassiterite, Copper Pyrites, Galena, Wolfram, Garnet, and Chlorite, in greywacke. *Loc.* King of the Ranges Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 222, pp. 41-50 (1910).

6693. ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Cassiterite, Stannine, Iron Pyrites, Ironstone, Wolfram, Fluorspar, and Chlorite, in lode. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 26 (1883), 119, p. 15 (1897).

6694. ——. In elvan dyke. *Loc.* St. Kilda Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

6695. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Copper carbonate, Chalcanthite, Marcasite, Cassiterite, Wolfram, Limonite, and Red and Yellow Ochre. *Loc.* Try Again and Chance Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

6696. ——. *Assoc.with* Cassiterite and Chlorite. *Loc.* Ulster Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 21 (1883).

6697. ——. *Assoc.with* Cassiterite and Wolfram, in quartzite. *Loc.* Victoria Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

6698. ——. *Assoc.with* Scorodite, Wolfram, Scheelite, Molybdenite, Native Bismuth, Bismuthinite, Bismutite, Cassiterite, Manganese-dioxide, with traces of Iron Pyrites, Hematite, Limonite, Magnetite, etc., in irregular masses of quartz in greisen belt. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbullah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

6699. ——. *Assoc.with* Scorodite, Wolfram, Molybdenite, Scheelite, Native Bismuth, Bismutite, and Molybdenite, with traces of Copper Pyrites, Tenorite, Chrysocolla, Iron Pyrites, etc., in irregular quartz masses in greisen. *Loc.* Bamford Wolfram Mines, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

6700. ——. *Assoc.with* Iron Pyrites, Cassiterite, Wolfram, Molybdenite, and Monazite, in quartz and mica in greisen country. *Loc.* California Cr., nr. Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6701. ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Boomerang Copper Mine, 1 mile W. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

6702. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Cassiterite, and Galena. *Loc.* Iolanthe Mine, Koorboora Rail. Stn. (Chillagoe line), 108 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 11 (1891).

6703. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Cassiterite, and Galena, in lode. *Loc.* Shakespeare Tin Lease, Koorboora (*ante*). *Ref.* G.S.Q. Pub. 69, p. 11 (1891).

6703A.——. In quartz. Mark Tapley Mine, Mungana, 149 miles (by rail) W.S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* A.R., p. 234 (1910).

6704. ——. *Assoc.with* Fluorspar. *Loc.* Ord, on Mt. Garnet line (Chillagoe Br. line), 120 miles S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*).

——. *See further* Walsh and Tinaroo references, No. 6734, etc.

6705. ——. *Assoc.with* Gold, in granite. *Loc.* Jordan P.C., Jordan Gully, Jordan Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Assay:* Gold = 2 oz. 10 dwt. 7 gr. per ton; Silver = 15 dwt. per ton. *Ref.* G.S.Q. Pub. 157, p. 3 (1907).

6706. ——. *Assoc.with* Gold, in quartz. *Loc.* Phœnix Reef, Towalla Camp, Russell Extd. Goldfield, 18 miles W. of Geraldton. *Co.* Nares (*ante*). *Ref.* G.S.Q. Pub. 89, p. 4 (1893).

6706A.——. *Assoc.with* Galena, Massicot, Cerussite, Iron Pyrites, and Zinc Blende, in lode. *Loc.* Chillagoe Mine, off Wise's Knob, Oaks Goldfield, 30 miles (by road) S. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy; *Dist.* Cook. *Ref.* A.R., p. 187 (1909).

6707. ——. *Assoc.with* Scorodite and Iron Pyrites, in quartz reef. *Loc.* Gummo's Claim, Horn Is. Goldfield, 3 miles S.E. of Thursday Island, Torres Strait. *Co.* Torres; *Dist.* Cook. *Ref.* G.S.Q. Pub. 150, p. 13 (1900).

6708. ——. Glenelg, 35 miles W.byS. of Warwick, and 31 miles W.byS. of **Stanthorpe.** *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.M.

6709. ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende, in chloritic rock. *Loc.* Doctor's Lode, in Sel. (39), Jibbinbar, 20½ miles S.W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 67, p. 2 (1890).

6710. ——. *Assoc.with* Gold, Silver, and Copper Pyrites, in quartz reef. *Loc.* Fletcher's Claim, in Sel. (29), Jibbinbar (*ante*). *Assay: See* 3832. *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

6711. ——. *Assoc.with* Silver, Galena, Iron Pyrites, and Zinc Blende, in quartz reef. *Loc.* Jibbinbar Silver Mine, Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 125, p. 29 (1897).

6712. ——. *Assoc.with* Iron Pyrites and traces of Copper and Mica, in quartz lode. *Loc.* Mogg's Mine, Sel. (26), Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

6713. ——. *Assoc.with* Gold, Galena, and Minium, in quartz and gossan. *Loc.* Min. Area (25), Jibbinbar (*ante*). *Assays: See* No. 2830. *Ref.* G.S.Q. Pub. 87, p. 10 (1892).

6714. ——. *Assoc.with* Silver, Copper Pyrites, and Malachite, in lode. *Loc.* Min. Area (26), Jibbinbar (*ante*). *Assay:* Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 87, p. 10 (1892).

6715. Mispickel. *Assoc.with* Galena, in quartz reef. *Loc.* Sels. 34, 35, Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

6716. ——. *Assoc.with* Gold, Silver, and Zinc Blende, in quartz lode in granite country. *Loc.* Steele's Sel. (31), Jibbinbar (*ante*). *Assay: See* No. 3833A. *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

6717. ——. In massive outcrops. *Loc.* North of Mt. Jibbinbar, head of Pike's Cr., 20½ miles S.W.byW. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* B.D.

6718. ——. *Assoc.with* Copper carbonate and Cassiterite, in lode. *Loc.* Nundubbermere Run, 13 miles S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay:* Silver = 3 oz. 6 dwt., and Gold = trace per ton. *Ref.* G.S.Q. Pub. 40, p. 4 (1887), A.R., p. 85 (1907).

6719. ——. *Assoc.with* Gold and Galena, in quartz and calcite. *Loc.* Kaffir Chief Mine, Pikedale Goldfield, 20 miles N.W.byN. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* (and *Yields, Assays*) G.S.Q. Pub. 120, pp. 73-77 (1898).

6720. ——. *Assoc.with* Gold, in quartz. *Loc.* P. and O. Mine, W. slope of Herries Range, 3 miles W. of Macintyre Brook, Pikedale Goldfield (*ante*). *Assay: See* No. 3835. *Ref.* G.S.Q. Pubs. 105, p. 6 (1895), 120, p. 77 (1898).

6721. ——. *Assoc.with* Gold, Cassiterite, Wolfram, and Molybdenite, in quartz and greisen. *Loc.* Pikedale Lode, (Sels. 705 and 706W), 10 miles W.byN. of Stanthorpe Rail. Stn. *Co.* Bentinck; *Dist* Darling Downs. *Assays: See* No. 3840. *Ref.* G.S.Q. Pubs. 40, p. 4 (1887), 120, p. 47 (1898).

6722. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Azurite, Cassiterite, and Zinc Blende, in quartz, greisen, and slate. *Loc.* Ballandean Tin Mine, Severn R., 14 miles (by rail) S. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M. and L.C.B., and B.D.

6723. ——. *Assoc.with* Iron Pyrites, Galena, and Zinc Blende. *Loc.* Ballandean Mine, Severn R. (*ante*). *Ref.* G.S.Q. Pub. 125, pp. 29, 30.

6724. ——. *Assoc.with* Iron Pyrites, Scorodite, Cassiterite, Wolfram, and Molybdenite, in quartz. *Loc.* P.A. (48), Severn R., 6 miles, W. of Ballandean Rail. Stn., 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 191, p. 10 (1904).

6725. ——. *Assoc.with* Copper Pyrites, Chrysocolla, Cassiterite, and Wolfram, in quartz. *Loc.* Gt. Eastern Tin Mine (Block 24), Red Rock Cr., Severn R., 11 miles W.S.W. of Ballandean, 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 49 (1898).

6726. ——*Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in lode. *Loc.* Silver Queen Mine, Severn R., 6 miles W. of Ballandean Rail. Stn. 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assays: See* No. 2834. *Ref.* G.S.Q. Pub. 191, pp. 24, 39 (1904).

6727. ——. *Assoc.with* Copper Pyrites, Cassiterite, Wolfram, Zinc Blende, Calcite, Chlorite, and Orthoclase, in quartz lode. *Loc.* Sundown Copper Mine, Sundown Cr., Severn R., 12 miles S.W.byW. of Ballandean, 26 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay: See* No. 2192. *Ref.* G.S.Q. Pub. 191, p. 22 (1904), and B.D.

6728. ——. *Assoc.with* Silver, in quartz. *Loc.* Sel. (23), Sundown Cr., Severn R. (*ante*). *Assays:* Silver = 70 oz. 2 dwt. 4 gr., and Gold = 2 dwt. 4 gr. per ton (?). *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

6729. ——. *Assoc.with* Scorodite, Iron Pyrites, Cassiterite, Zinc Blende, Hornblende, etc., in slate. *Loc.* Beacroft's Workings, Sundown Cr., Severn R. (*ante*). *Ref.* G.S.Q. Pub. 191, p. 23 (1904).

6730. ——. *Assoc.with* Cassiterite and Wolfram, in slate and greisen. *Loc.* Clare's Open Cut, Min. Lease (24), Sundown Cr., Severn R. (*ante*). *Ref.* G.S.Q. Pub. 191, p. 23 (1904).

6731. ——. Warroo Mine, about 3½ miles E. of Mt. Bullaganang, 38 miles W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* B.D.

6732. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* 2½ miles S.W. of Talgai Stn., 23½ miles W.N.W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Assays:* (1) Gold = 3 oz. per ton. (2) Gold = 2 oz. 15 dwt. per ton; Silver = 3 oz. per ton. *Ref.* G.S.Q. Pub. 120 (1898).

6733. ——. *Assoc.with* Gold, in quartz. *Loc.* Telegraph Reef, Thane's Cr. Goldfield, 24 miles W. of Warwick. *Co.* Merivale (*ante*). *Ref.* G.S.Q. Pub. 87, p. 9 (1892).

6734. ——. *Assoc.with* Cassiterite, in lode. *Loc.* North Britain Tin Mine, Coolgarra, 12 miles N.E.byN. of Mt. Garnet Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 72, p. 3 (1891).

6735. ——. *Assoc.with* Iron Pyrites, Göthite, Limonite, Hematite, Cassiterite, Azurite, Malachite, Wolfram, Websterite, Chlorite, Fluorspar, Penninite, Topaz, in quartz lodes. *Loc.* Tin Mines, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

6736. ——. *Assoc.with* Wolfram. *Loc.* Devon Wolfram Mine, 3 miles from Coolgarra, 15 miles N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* B.D.

6737. ——. *Assoc.with* Cassiterite, Hornblende, Steatite, Chlorite, Biotite, and Orthoclase, in lode formation. *Loc.* Gt. Northern Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Cairns-Herberton line, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 3 (1883), and P.R.S.Q., vol. 4, p. 53 (1887).

6738. ——. *Assoc.with* Copper Pyrites, Chalcanthite, and Cassiterite, in elvan dyke and quartz. *Loc.* Ironclad Tin and Copper Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 8 (1883).

6739. ——. *Assoc.with* Zinc Blende and Galena, in lode. *Loc.* Koh-i-noor Mine, Coolgarra, 12 miles N.N.E. of Mt. Garnet rail. line, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 40 (1887).

6740. ——. *Assoc.with* Cassiterite, in quartz lode. *Loc.* Ulster Tin Mine, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

6741. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, Chalcanthite, Iron Pyrites, Hematite, Magnetite, Zinc Blende, Cerussite, and Minium, in quartz lodes in quartzite and porphyry. *Loc.* Mt. Garnet Mines, Return Cr., Wild R., 136 miles (by rail) S.W. of Cairns, Cairns-Chillagoe Rail., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 134, pp. 16, 17 (1898).

——. *See further* Walsh and Tinaroo references, No. 6687, etc.

6742. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* New Imperial Mine, Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Assay:* Gold = 8½ oz. per ton. *Ref.* A.R.D.M., p. 33 (1894).

6743. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Victoria Mine, Charters Towers (*ante*). *Ref.* G.S.M.

6744. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Good Luck United (Lancashire Lass No. 1 W.) Mine, Far Fanning, 28 miles (by road) N.W. of Ravenswood Junction, Gt. Northern line. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 133, p. 7 (1898).

6745. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Nil Desperandum Reef, in New Consols Mine, Donnybrook, 6½ miles S. of Ravenswood Rail. Stn., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

6746. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Australia Felix Mine, 2½ miles E.S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Assay:* Gold = 20 oz. per ton. *Ref.* P.R.S.Q., vol. 4, p. 35 (1887).

6747. ——. *Assoc.with* Copper Pyrites, Tenorite, Malachite, Iron Pyrites, and Zinc Blende. *Loc.* Buck Reef, ½-mile E.S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 76 (1887).

6748. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Shellmalier Reef, Elphinston Cr., 30 Chains N.N.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 8 (1900), and G.S.M.

6749. ——. *Assoc.with* Gold, in quartz. *Loc.* Martin's Reef, Mt. Remarkable, 6 miles W.byN. of Pentland Rail. Stn., 72 miles (by rail and road) S.W.byW. of Charters Towers, Cape R. Goldfield. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 73, p. 5 (1891).

6750. ——. *Assoc.with* Gold, in quartz. *Loc.* High Bar Reef, Old Homestead Diggings, 46 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith (*ante*). *Ref.* G.S.Q. Pub. 73, p. 12 (1891).

6751. ——. *Assoc.with* Native Silver, Galena, Cerussite, Malachite, Chrysocolla, Manganese-dioxide, Hematite, and Zinc Blende, in kaolin lode. *Loc.* Hidden Treasure Lease (165), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Assays:* *See* 1241. *Ref.* G.S.Q. Pubs. 71, p. 9 (1891) and 82, p. 7 (1892).

6752. ——. *Assoc.with* Bornite, Copper carbonate, and Chrysocolla, in chloritic lode. *Loc.* Ingola Lease (177), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

6753. Mispickel. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Manganese-dioxide, Zinc Blende, Smithsonite, Hematite, Ironstone, Fluorspar, and Garnet, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 82, p. 3 (1892).

6754. ——. *Assoc.with* Cassiterite and Fluorspar, in Chloritic lode. *Loc.* New Chum Lease (194), Butterfly Gully, Mt. Brown, 12 miles W. of Ewan, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

6755. ——. *Assoc.with* Copper Pyrites, Tile Ore, Bornite, Galena, Cerussite, and Hematite, in lode. *Loc.* Wallaroo Lease (162), nr. Running R. Crossing, Kangaroo Hills Mineral Field (*ante*). *Assay:* Silver = 3 oz. 13 dwt. 12 gr. per ton, Copper = 1·7 per cent. *Ref.* G.S.Q. Pub. 82, p. 11 (1892).

6756. ——. *Assoc.with* Cerussite. *Loc.* Bowden's Sel. (147), Star R. (Argentine) Silver Field, 50 miles (by coach) N.W. of Ravenswood Junction (Gt. Northern line). *Co.* Wilkie Grey; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 26, p. 6 (1886).

6757. ——. *Assoc.with* Copper Pyrites, Malachite, Galena, Cerussite, Minium, Magnetite, Manganese-dioxide, Ironstone, and Iron Ochre. *Loc.* Colorado Silver-Lead Mine, Star R. (Argentine) Silver Field (*ante*). *Assays: See* No. 2983. *Ref.* G.S.Q. Pub. 26, p. 7 (1886).

6758. ——. *Assoc.with* Iron Pyrites and Galena, in vein. *Loc.* Venture Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

6759. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Bismutite, and Hematite. *Loc.* Gold Workings, Mine Cr., Black Waterhole Cr., 5 miles N.E. of Hazledean, 37 miles S.W. of Mackay, Mt. Spencer Goldfield. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 164, pp. 10-12 (1901).

6760. ——. *Assoc.with* Galena, Cerussite, Iron Pyrites, Copper Pyrites, Malachite, Azurite, and Zinc Blende, in quartz lode. *Loc.* Mt. Barker Silver Mine, 3 miles N.W. of Eungella Stn., 33 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 3 (1889); 181, pp. 12-17 (1903); and 229, pp. 34, 35 (1910).

6761. ——. *Assoc.with* Gold, Copper Pyrites, and Siderite, in vein of quartz. *Loc.* Faith (formerly Just-in-Time) Reef, Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Assay:* Gold = 9 oz. 6 dwt. per ton. *Ref.* G.S.Q. Pub. 88, p. 5 (1893).

6762. ——. *Assoc.with* Gold, Copper Pyrites, and Marcasite, in quartz. *Loc.* Frederick I. Reef, nr. Peter's Cr., Normanby Goldfield (*ante*). *Assay:* Gold = 2½ oz. per ton. *Ref.* G.S.Q. Pub. 88, p. 1 (1893), and G.S.M.

6763. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Glengarry Mine, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 83, p. 3 (1893).

6764. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Tetrahedrite, Siderite, Ironstone, and Yellow Ochre, in quartz reef. *Loc.* Grace Darling Lease (11), Normanby Goldfield (*ante*). *Assay: See* No. 4128. *Ref.* G.S.Q. Pubs. 5, p. 6 (1879), and 88, p. 3 (1893).

6765. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Marcasite, and Steatite, in quartz reef. *Loc.* Victor Tunnel, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pub. 88, p. 5 (1893), and G.S.M.

6766. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Copper carbonate, in quartz reef. *Loc.* Welcome Reef, Normanby Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 5, p. 5 (1879), and 88, p. 2 (1893).

6767. ——. *Assoc.with* Cerussite and Minium, in vein. *Loc.* Long Hill Gold and Silver Mine, Scrubby Cr., on Coast Range, 9 miles S. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Assays: See* No. 1287. *Ref.* G.S.Q. Pub. 39, p. 9 (1887).

6768. ——. Altering into Scorodite. *Loc.* Lady Jane Mine, Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* O.R.

6769. ——. *Assoc.with* Gold, Galena, and Minium. *Loc.* Venture Silver Mine, Sellheim Mineral Field (*ante*). *Assays: See* No. 4147. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

6770. —— *Assoc.with* Gold and Iron Pyrites, in quartz and chlorite. *Loc.* Star of Hope Reef, Copperfield, 4 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 27, p. 5 (1886).

6771. ——. *Assoc.with* Gold, Silver, and Malachite, in quartz reef. *Loc.* Ironbark Mine, Miners' Cr., Collaroy, 5 miles N.W. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Assay: See* No. 4181. *Ref.* G.S.Q. Pub. 141, p. 4 (1898).

6771A.——. *Assoc.with* Malachite, Azurite, and Hematite, in slate. *Loc.* Fitzgerald's M.F. (1408), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney (*ante*). *Ref.* G.S.Q. Pub. 228, p. 26 (1910).

6771B.——. *Assoc.with* Hematite and Malachite, in gossan in granite. *Loc.* True Blue M.L. (29), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 43, 44 (1910).

6772. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Galena, and Zinc Blende, in quartzite. *Loc.* Silver-Lead Deposit, on Por. 46, Par. of Monsildale, 35 miles N.byW. of Esk Rail. Stn., 102 miles (by rail and road) N.N.W. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Ref.* (and *Assays*) G.S.Q. Pub. 169, pp. 1-4 (1901).

6773. ——. *Assoc.with* Iron Pyrites, Galena, Massicot, Bismite, and Chlorite. *Loc.* Blackbutt, 14 miles W.byS. of Benarkin Rail. Stn. (Brisbane-Valley line), 125 miles (by rail and road), W.N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* O.R.

6774. ——. Eskdale Stn., Burnett R., 14 miles N.W. of Esk Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Ref.* G.S.M.

6775. ——. *Assoc.with* Iron Pyrites, Cerussite, Massicot, Wolfram, and Scorodite. *Loc.* Plant's Leasehold, 4 miles E. of Crow's Nest Rail. Stn., 38 miles (by rail and road) N.N.E. of Toowoomba. *Co.* Cavendish (*ante*). *Ref.* A.R., pp. 148, 149 (1908).

6776. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Massicot, Anglesite, Galena, and Limonite. *Loc.* Silver Knob P.A., Emu Cr., Mt. Langan, 14½ miles W.N.W. of Kannangar Rail. Stn. (Brisbane-Valley line). *Co.* Cavendish (*ante*). *Assay: See* No. 3033. *Ref.* Q.G.M.J., vol. 7, p. 467 (1906).

6777. ——. *Assoc.with* Gold, Iron Pyrites, and Tourmaline, in quartz reefs. *Loc.* Seven-mile Diggings, 7 miles S.E. of Nanango, 123 miles N.W.byN. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* L.C.B. and Q.G.M.J., vol. 7, p. 525 (1906).

6778. ——. *Assoc.with* Gold, Copper Pyrites, and Garnet, in quartz and chlorite. *Loc.* P. Area, head of Ithaca Cr., Mt. Cootha, 4 miles S.W.byW. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 98, p. 2 (1894).

6779. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Beaton's Sel. (68), 6 miles S.E. of Beenleigh Rail. Stn. (South Coast line), 30 miles (by rail and road) S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Assays:* Gold = 2 dwt. and 13 dwt. per ton. *Ref.* G.S.Q. Pub. 51, p. 6 (1889).

6780. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Buckley's Shaft, 8 miles S. of Beenleigh, 28 miles (by rail and road) S.E. of Brisbane, on South Coast line. *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 36, p. 2 (1887).

6781. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Fischer's Sel. (121), ¾-mile W. of Beenleigh Rail. Stn. (S. Coast line), 27 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Assays: See* No. 4225. *Ref.* G.S.Q. Pub. 36, p. 1 (1887).

6781A.——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* 5 miles S. of Beenleigh Rail. Stn. (South Coast line), 29 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* A.R., p. 217 (1910).

6782. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Witty's Mountain, Sel. (239), 6 miles S.E. of Beenleigh, and 30 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* G.S.Q. Pub. 36, p. 1 (1887).

6783. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Griffith's Reef, W. side of Digger's Cr., Barmundoo (Tableland) Goldfield, 28 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Yield: See* No. 4235. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

6784. ——. *Assoc.with* Gold, Silver, Azurite, and Malachite, in quartz, ironstone, and clay. *Loc.* P. Area (56), Diglum Cr., Barmundoo Stn., 21 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 162, p. 9 (1901).

6785. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in quartz. *Loc.* Good Hope Mine, Crow's Cr., Barmundoo Run, 35 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Assays: See* No. 4242. *Ref.* G.S.Q. Pub. 58, p. 5 (1890).

6786. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz reef. *Loc.*, Roger's Mine, Bompa Goldfield, 44½ miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 58, p. 7 (1890).

6787. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, Zinc Blende, and Calcite, in quartz. *Loc.* Advance Reef, Norton (Milton) Goldfield, 33 miles S.byE. of Gladstone. *Ref.* G.S.Q. Pubs. 21, p. 6 (1885), 208, pp. 10, 11 (1907).

6788. Mispickel. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Scorodite, in quartz. *Loc.* Bald Hills Reef, Norton (Milton) Goldfield (*ante*). *Assays: See* No. 4266. *Ref.* G.S.Q. Pub. 208, p. 13, 14 (1907).

6789. ——. *Assoc.with* Gold, Silver Iron Pyrites, Copper Pyrites, Redruthite, Azurite, Malachite, Zinc Blende, and Scorodite, in quartz. *Loc.* Chandler's Reef, Norton Goldfield (*ante*). *Assay: See* 4269. *Ref.* G.S.Q. Pub. 208, p. 18 (1907).

6790. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Conran's Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 8 (1890).

6791. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc Blende, in quartz and calcite. *Loc.* Frampton Reef, Norton Goldfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 208, pp. 21, 22 (1907).

6792. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Galena, Zinc Blende, and Redruthite, in quartz. *Loc.* Goody's (Carmichael's) Reef, Norton Goldfield (*ante*). *Assay: See* No. 4277. *Ref.* G.S.Q. Pub. 208, p. 26 (1907).

6793. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Little Wonder Reef, Norton Goldfield (*ante*). *Assay: See* 4280. *Ref.* G.S.Q. Pub. 208, p. 29 (1907).

6794. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Never Never Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 7 (1885).

6795. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* New Constitution Mine, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 33 (1907).

6796. ——. *Assoc.with* Gold, Iron Pyrites, Limonite, and Zinc Blende, in quartz. *Loc.* Paddock Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 34 (1907).

6797. ——. *Assoc.with* Gold and Iron Pyrites, in calcite. *Loc.* Sailor Boy Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 35 (1907).

6798. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Sulphide Reef, Norton Goldfield (*ante*). *Assay: See* No. 4292. *Ref.* G.S.Q. Pub. 208, p. 38 (1907).

6799. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Zinc Blende, and Galena, in quartz and calcite. *Loc.* Who'd-Ha'-Thought-It Reef, Norton Goldfield (*ante*). *Assay: See* No. 4294. *Ref.* G.S.Q. Pubs. 21, p. 6 (1885), and 208, p. 39 (1907).

6800. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reefs. *Loc.* On Granite Ridges, between Wattle and Cattle Creeks, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 7 (1885).

6800A.——. *Assoc.with* Gold and Silver, in quartz. *Loc.* Archer Reef, Targinnie Goldfield, 4 miles N.N.W. of Yarwun Rail. Stn. (North Coast line). *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* (and *Assays*) Q.G.M.J., vol. 2, pp. 529, 530 (1901).

6801. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Mt. Gordon, nr. Sandy Cr., 3 miles W. of Wycarbah Rail. Stn. (Central line), 27 miles (by rail and road) S.W of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

6802. ——. *Assoc.with* Gold, in quartz. *Loc.* Wild Horse Reef, Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 21, p. 9 (1885).

6803. ——. *Assoc.with* Copper Pyrites and Zinc Blende. *Loc.* Mine nr. Cania Goldfield (*ante*). *Ref.* A.R.D.M., p. 34 (1894).

6804. ——. *Assoc.with* Copper Pyrites, Copper carbonate, Ironstone, and Biotite Mica, in quartz lode. *Loc.* Dee R. Copper Mine, above Dundee, 20 miles S.S.W. of Mt. Morgan, 44 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 155, p. 8 (1901).

6805. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz reef. *Loc.* Queen of the Valley Mine, between Dee R. and Crocodile Cr., 4 miles N.E. of Mt. Morgan Rail. Stn., 28 miles (by rail and road) S.S.W. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 132, p. 13 (1898).

6806. ——. *Assoc.with* Scorodite. *Loc.* Grey Dawn, Cordalba Rail. Stn. (Isis Br. line), 48 miles (by rail) N.W. of Maryborough. *Co.* Cook; *Dist.* **Wide Bay.** *Ref.* L.C.B.

6807. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Redruthite, Pyrrhotite, Galena, and Stibnite, in lode. *Loc.* Mariner's Reef, Black Snake Goldfield, 10 miles S. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Assays and Analysis of Ore: See* No. 2318. *Ref.* G.S.Q. Pub. 28, p. 6 (1886).

6808. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz reef. *Loc.* Rose, Shamrock, and Thistle Reef, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 5 (1886).

6809. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Galena, Zinc Blende, and Schorl, in quartz. *Loc.* Victoria Reef, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

6810. ——. *Assoc.with* Gold, Iron Pyrites, Copper carbonate, Limonite, and Zinc Blende, in quartz and calcite. *Loc.* Mt. Ruby, ½-mile W.N.W. of Glenbar Head Stn., 20 miles W. of Tiaro Rail. Stn. (North Coast line). *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

6811. ——. *Assoc.with* Copper Pyrites, Azurite, Malachite, and Galena, in granite formation. *Loc.* West Calgoa Lode, in Sel. 1393, 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

6812. ——. *Assoc.with* Gold. *Loc.* Columbia Consolidated Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.M.

6813. ——. In quartzite. *Loc.* Samarai (Dinner) Is., 259 miles E.S.E. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q Pub. 55, p. 2 (1889).

Missing Link Claim, Sudest Is. *Min.Ref.* Gold, *see* 4557.

Mistake Cr., trib. of Gunpowder Cr., N.W.byN. of Cloncurry. About *Lat.* 19° 36′ S., *Long.* 139° 44′ E. *Min.Ref.* Gold (alluvial), *see* 3174.

—— ——, Stanhills. Flows S.W. into 10-Mile Creek, 20 miles S.E. of Croydon. *Min.Ref.* Cassiterite, *see* 764.

—— —— Bore. *See under* Artesian Bores. No. 262.

—— Co. Mitchell Dist. *See map*, Pl. 18.

Mitchell District. (*See maps.*, Pls. 18, 19).

SITUATION, ETC.: (*Lat.*, 20° and 26°; *Long.*, 142° and 147°.) In the Central part of Queensland, and bounded on the E. by the districts of North and South Kennedy and Leichhardt, on the S. by Warrego and Gregory South, on the W. by Gregory North, and on the N.W. by Burke. Principal Rivers:—Thompson (tribs. Darr R., Landsborough Cr., Vergemont Cr.), Barcoo, and Alice.

AREA: 55,362 sq. miles.

PRINCIPAL MINING CENTRE: Opalton Mineral Field, including the Jundah Opal Field, *which see.*

COUNTIES:

Barcoo Co. Cheviot Co. Coorajah Co. Coreena Co.
Cumberland Co. Camoola, Muttaburra, Tangorin.
Evora Co.
Fermoy Co. Opalton Mineral Field (*in part—See also* Vergemont Co., Warbrecca Co., Musgrave Co. *See also* Gregory North Dist.). Opalton or Fermoy Opal Field. Opal Mines—Little Wonder, Brilliant, Conways, and Black Knob.
Gayundah Co. Maneroo Co. Mexico Co. Mitchell Co.
Musgrave Co. Opalton Mineral Field (*in part—See also* Fermoy Co.).
Paluma Co.
Portland Co. Arrilalah, Ilfracombe, Longreach, Wellshot.
Rodney Co. Aramac, Barcaldine, Scarrburg.
Ruthven Co. Tambo Co. Towerhill Co. Uanda Co.
Vergemont Co. Opalton Mineral Field (*in part—See also* Fermoy Co.).
Walker Co.
Warbreccan Co. Opalton Mineral Field (*in part—See also* Fermoy Co.). Jundah Field (Opal). Opal Mines—Old Field (Top Flat) and Black Mine Workings.
Windeyer Co.
Wolseley Co. Jundah Township, Stonehenge.
Wooroolah Co. Woura Co. Youranigh Co.

MINERAL REFERENCES AND STATISTICS: *See under* Opalton.

—— Limestones. Notes on fossils and rocks. G.S.Q. Pub. 175, pp. 4, 5 (1902).

Mitchell Plains, 24 miles W.S.W. of Bowen. *Min.Ref.* Galena, *see* 2957A.

—— Sub-artesian Bore. *See under* Artesian Bores and Notes. Nos. 37, 74, 340. Bands of coal in No. 37 at 930 feet. *Min.Ref.* Coal, *see* 1706B.

—— Reef, New Zealand Gully, S.E. of Calliope. *Min.Ref.* Calcite, *see* 527B; Gold, 4253.

Mitchell River. Heads near Biboohra Rail. Stn. (Chillagoe line), flows W.N.W. into Gulf of Carpentaria. Length, about 350 miles. *Tributaries:* Palmer, Walsh, Lynd, Tate, Hodgkinson, and St. George Rivers, etc. *Min.Ref.* Chalcedony, *see* 1374; Cuprite, 2443; Malachite, 6247; Manganese-dioxide, 6404, 6405; Stibnite, 7633.

—— —— (On hill N. of), below mouth of St. George R. *Min.Ref.* Manganese-dioxide, *see* 6405.

—— —— Gold and Antimony Mines, 40 miles N.E.byN. of Mungana Rail. Stn. (Chillagoe line). *Min.Ref.* Antimony, *see* 73; Gold, 3828.

—— —— Gold and Antimony Mines (half-way between O.K. Copper Mines and), N. of Mungana. *Min.Ref.* Cinnabar, *see* 1546.

Mitchell's Sub-artesian Bore. *See under* Artesian Bores. No. 144.

Miva Coal Deposits, Munna Cr., 2½ miles above Mary R. *Min.Ref.* Coal, *see* 1817, 1818.

GEOLOGICAL NOTE: The rocks comprise coal measures belonging to the Burrum Series (Cretaceous), and slates, etc., of Gympie Formation (Permo-Carboniferous), the latter forming outcrops to the west. *See* G.S.Q. Pub. No. 92, p. 305, for notes.

—— Creek, br. of Munna Cr., 4 miles N.W. of Miva Rail. Stn. *Min.Ref.* Barytes, *see* 285.

—— Crossing, Mary R. *Min.Ref.* Ironstone, *see* 5633.

Moffat (Par. of) (Por. 261), S.E.byS. of Brisbane. *Min.Ref.* Coal, *see* 1782F.

Moggill (Par. of), 12 miles W.byS. of Brisbane. Centre about *Lat* 27° 30′ S., *Long.* 152° 55′ E. Coal was discovered at Moggill before 1854, and in this year was found in a borehole sunk by J. Williams on Sel. 14. *Min.Ref.* Coal, *see* 1765, 1766; Manganese-dioxide, 6455.

GEOLOGICAL NOTE: Rocks comprise shales, sandstones, etc., of Ipswich Formation (Trias-Jura), schists of undetermined age, and basalt. Coal seams occur in the Ipswich Beds, and quartz reefs traverse the schists, the basalt being below the coal measures. *See* G.S.Q. Pubs. No. 58 and 63 for details. (Note by the late Mr. Fryar.—Fault cut off the coal towards Goodna, the beds dipping 10° to the S.W. All the Govt. Reserves at Goodna should be coal-bearing.)

—— Bores (no record). *See note under* Ipswich Coalfield *under* Coal Bores.

—— Cr., 10 miles W.byS. of Brisbane. *Min.Ref.* Galena, *see* 3035; Gold, 4207; Iron Pyrites, 5342; Ironstone, 5610.

Mogg's Mine, Jibbinbar. *Min.Ref.* Iron Pyrites, *see* 5107; Mispickel, 6712.

Mohawk Mine, nr. Mt. Morgan. *Min.Ref.* Copper Pyrites, *see* 2312; Magnetite, 6060.

Mohonga Bore. *See under* Artesian Bores. No. 205.

Molangul Reef, S.S.W. of Mt. Perry. *Min.Ref.* Gold, *see* 3587; Iron Pyrites, 4983; Magnetite, 5972.

Moller and Bennett's Copper Workings, 4½ miles N.byE. of Murphy's Cr. Rail. Stn. *Min.Ref.* Copper Pyrites, *see* 2278; Galena, 3034. *See also under* Gov. Ming. Jour. Special Reports, No. 105.

Mollie Lease, Marble Cr., Calcifer. *Min.Ref.* Cuprite, *see* 2435; Hematite, 4712; Malachite, 6228; Minium, 6581; Tetrahedrite, 7762.

Molybdate of Lead. *See* Wulfenite.

Molybdenite. *Compo.* Sulphide of molybdenum. *Colour*, Lead-grey. Metallic. Micaceous. *H.* = 1-1·5. *Sp.gr.* = 4·4. *Contents* (*max.*), Molybdenum 60 per cent.

ASSOCIATED MINERALS: Ores of Bismuth, Copper, Gold, Iron, Lead, Manganese, Silver, and Zinc, also Monazite, Wolfram, Calcite, Felspar, Fluorspar, Mica, Quartz, Topaz.

DISCOVERY: First observed at Bamford in 1892; first discovery in payable quantities at Wolfram Camp in 1894.

MINERAL NOTE: Wolfram is its common associate, but bismuth often occurs with it. The three minerals, Molybdenite, Wolfram, and Native Bismuth are frequently crystallised together in Quartz. The gangue is always white quartz, but mica and felspar are often present.

USES: *See note under* Molybdenum.

GEOLOGICAL NOTE: Quartz masses containing Molybdenite are nearly always irregular in form, and are generally distinguishable on the surface as white "blows." They usually occur in belts of granite or greisen country, but at times are to be seen in chlorite, quartz-felsite, schist, or slate—in the vicinity of granite.

STATISTICAL TABLES AND DIAGRAM: *See* Pls. 42, 45, 46, 46A, 54.

BIBLIOGRAPHY: *Principal Ref.* Cameron (W.E.), G.S.Q. Pub. 188 (1903). *See* Geol. Surv. List for title.

6814. ——. *Assoc.with* Wolfram and Cassiterite, in small leaders, in quartz felsite. *Loc.* Right-hand br. of Ten-mile Cr., about 30 miles S.E. of Croydon, Stanhills Tinfield. *Co.* Esmeralda; *Dist.* **Burke.** *Ref.* B.D.

6814A. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, and Redruthite, in lode formation. *Loc.* May Graham P.A., 4 miles W. of Soldier's Cap, about 33 miles (by road) S.E. of Cloncurry, Mt. Wheeler Group. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 225 (1908).

6815. ——. *Assoc.with* Gold, Iron Pyrites, and Ironstone, in quartz. *Loc.* White's Reef, nr. Mt. Ophir, Chowey Cr., 62 miles (by rail) W. of Maryborough (Gayndah Br. line). *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 25, p. 3 (1897).

6816. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* P. Area (28), Perry Scrub, St. Agnes Cr., Perry Goldfield, 15 miles S. of Gin Gin Rail. Stn. (Mt. Perry line), 34 miles (by rail and road) S.W. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 184, p. 9 (1903).

6817. ——. In quartz reefs. Perry Scrub, St. Agnes Cr. (*ante*). *Ref.* G.S.Q. Pub. 184, p. 91 (1903).

6818. ——. *Assoc.with* Gold, Silver, and Copper Pyrites, in quartz veins in granite. *Loc.* Globe Copper Mine, Wolca, 6 miles N. of Mt. Perry Rail. Stn. *Co.* Bowen. *Assay: See* No. 2130. *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and B.D.

6819. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Lady Florence Mine, Chowey Goldfield, 6 miles N. of Didcot Rail. Stn. (Gayndah line), 74 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 125, p. 35 (1897).

6820. ——. *Assoc.with* Gold and Molybdenite, in quartz reef. *Loc.* Old Chowey Mine, Chowey Goldfield (*ante*). *Ref.* G.S.Q. Pub. 25, p. 4 (1886), and G.S.M.

6821. ——. *Assoc.with* Gold, Telluride of Gold, Native Bismuth, Bismuthinite, Joseite, Copper Pyrites, Malachite, Mispickel, Zinc Blende, and Calcite. *Loc.* Mt. Shamrock Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah Br. line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 60, p. 6 (1890), 125 (1897), 168 (1901), and B.D.

6822. ——. *Assoc.with* Gold and Molybdenite, in quartz reef. *Loc.* Mt. Venus Mine, Mt. Steadman, 4½ miles W. of Biggenden Rail. Stn. (Gayndah Br. line). *Co.* Cook (*ante*). *Ref.* G.S.M.

6823. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Mt. Steadman (*ante*). *Ref.* G.S.M.

6824. ——. *Assoc.with* Gold, in quartz. *Loc.* Moonlight Reef, Burnett R., Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 43, p. 5 (1887).

6825. ——. *Assoc.with* Wolfram and Bismutite, with traces of Hematite, Limonite, Mispickel, and Scorodite, in quartz, chlorite, muscovite, and felspar. *Loc.* Blackfellow's Cr., br. of Lynd R., 10 miles W. of Fossilbrook, 40 miles S.W. of Almaden Rail. Stn. (Chillagoe line), **Walsh and Tinaroo Mineral Fields.** *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* B.D.

6826. Molybdenite. *Assoc.with* Wolfram, Cassiterite, Scheelite, Native Bismuth, and Bismutite, with traces of Copper Pyrites, in quartz, chlorite, and muscovite. *Loc.* Pinnacle Cr., 20 miles W. of Fossilbrook, 50 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6827. ——. *Assoc.with* Wolfram and Bismutite, in quartz, fluorspar, etc. *Loc.* Rose Cr., br. of Lynd R., 6 miles S.W. of Fisherton, Tate R., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6828. ——. *Assoc.with* Wolfram and Cassiterite, in quartz and muscovite. *Loc.* Spring Cr., br. of Blackfellow's Cr., 12 miles W. of Fossilbrook, 45 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6829. ——. *Assoc.with* Wolfram and Cassiterite, in quartz, chlorite, and muscovite. *Loc.* Tableland, head of Dixon's Cr., br. of Lynd R., 30 miles W. of Fossilbrook, 8 miles from the Einasleigh R., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6830. ——. *Assoc.with* Wolfram, Scheelite, Tungstite, and Cassiterite, with traces of Tenorite, Malachite, Chrysocolla, Iron Pyrites, etc., in defined quartz lodes in slates. *Loc.* Mt. Carbine, 11 miles W. of Port Douglas, 34 miles (*viâ* Mt. Molloy) N.N.W. of Biboohra Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Dogmar; *Dist.* Cook. *Ref.* B.D.

6831. ——. *Assoc.with* Wolfram, Cassiterite, Native Bismuth, Busmutite, Mispickel, and Scorodite, with traces of Iron Pyrites, Copper Pyrites, Tenorite, Malachite, and Azurite, in irregular masses of quartz and greisen in granite. *Loc.* Boonmoo, 81 miles (by rail) S.W. of Cairns (Cairns-Chillagoe lines), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

6832. ——. *Assoc.with* Wolfram, Native Bismuth, and Bismutite, with traces of Mispickel, Hematite, Limonite, and Scorodite, in irregular masses of quartz and greisen in granite. *Loc.* Stannary Hills Mines, 93 miles (by rail) S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6833. ——. *Assoc.with* Wolfram, Bismuth (native), Bismuthinite, Bismutite, Mispickel, Scorodite, Scheelite, Cassiterite, and Manganese-dioxide, with traces of Iron Pyrites, Hematite, Limonite, Magnetite, etc., in irregular masses of quartz, in greisen belt. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbullah Rail. Stn. (Cairns line), Walsh an Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6834. ——. *Assoc.with* Wolfram, Scheelite, Bismuth (native), Bismutite, Molybdite, Mispickel, and Scorodite, with traces of Iron Pyrites, Copper Pyrites, Tenorite, Chrysocolla, etc., in irregular masses of quartz, in greisen. *Loc.* Bamford Wolfram Mines, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

6835. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Galena, and Zinc Blende. *Loc.* Bamford Wolfram Mines (*ante*). *Assay: See* No. 2167. *Ref.* A.R., p. 101 (1907).

6836. ——. *Assoc.with* Wolfram, Cassiterite, and Tenorite, with traces of Iron Pyrites, Hematite, Limonite, Mispickel, and Scorodite, in veins of mica and quartz in greisen. *Loc.* California Cr., nr. Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

6837. ——. *Assoc.with* Monazite, Wolfram, Cassiterite, Iron Pyrites, and Mispickel, in quartz and mica in greisen country. *Loc.* California Cr. (*ante*). *Ref.* B.D.

6838. ——. *Assoc.with* Wolfram, Scheelite, Tungstite, Native Bismuth, and Bismutite, with traces of Cuprite, Malachite, Iron Pyrites, Hematite, and Limonite, in quartz. *Loc.* Eight-mile Mountain, 8 miles N.N.W. of Fossilbrook, 28 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6839. ——. *Assoc.with* Wolfram, Cassiterite, Bismutite, Chalcolite, and Topaz, with traces of Hematite and Limonite, in small veins in large quartz topaz lode in granite. *Loc.* Lappa Wolfram Lode, 2½ miles S.S.W. of Lappa Rail. Stn. (Chillagoe line), 104 miles (by rail and road) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6840. ——. *Assoc.with* Wolfram, Native Bismuth, and Bismutite, in quartz and fluorspar. *Loc.* Schardon's Mine, 4 miles N. of Almaden Rail. Stn. (Chillagoe line), 124 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6840A. ——. *Assoc.with* Scheelite, in quartz. *Loc.* Wolfram Mine, ½-mile from eastern bank of Copperfield R., 12 miles S. of Kidston, Etheridge Goldfield. *Co.* Lyndhurst; *Dist.* Cook. *Ref.* G.S.Q. Pub. 234, p. 30 (1911).

6841. ——. *Assoc.with* Wolfram, Scheelite, and Cassiterite, with traces of Iron Pyrites, Malachite, and Azurite, in defined quartz lodes and leaders in granite. *Loc.* Glen Atherton, Tinaroo Cr., 12 miles S.E. of Mareeba Rail. Stn. (Cairns line), 18 miles S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* Cook. *Ref.* B.D.

6842. ——. *Assoc.with* Wolfram, with traces of Bismutite and Copper carbonate, in quartz. *Loc.* Leases (1988 and 1989), Tinaroo Cr., 6 miles N.N.E. of Tolga Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Nares (*ante*). *Ref.* G.S.Q. Pub. 188, pp. 12, 13 (1903).

6843. ——. Rocky R. Goldfield, 26 miles N.E. of Coen, 71 miles N.N.W. of Port Stewart. *Co.* Sidmouth; *Dist.* Cook. *Ref.* G.S.M.

6844. ——. *Assoc.with* Wolfram, Cassiterite, and Bismutite, with traces of Copper Pyrites, Copper carbonate, Mispickel, Hematite, Limonite, in quartz, chlorite, and muscovite. *Loc.* Four-mile Mountain, 4 miles N.W. of Fossilbrook, 35 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook. *Ref.* B.D.

6845. ——. *Assoc.with* Wolfram and Cassiterite, with traces of Hematite and Limonite, in quartz and chlorite. *Loc.* Nightshade, nr. Fossilbrook, 34 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

——. *See further* Walsh and Tinaroo references, Nos. 6855, etc.

6846. ——. In quartz veins. Sels. (550 and 363), on Blue Mountain Cr., 3 miles N.E.byE. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* B.D. and A.R.D.M., p. 175 (1902).

6847. ——. *Assoc.with* Wolfram and Cassiterite, in quartz and greisen. *Loc.* Shannon's Reef, Block 459, Brown's Gully, nr. Sugarloaf M.L., 7½ miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 44 (1898).

6848. ——. *Assoc.with* traces of Wolfram, in small quartz veins with greisen. *Loc.* Ranges W. of Dalcoath Cr., and 1 mile N. of Quart Pot Cr., 3 miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

6849. ——. *Assoc.with* Wolfram and Cassiterite, in quartz and greisen. *Loc.* Noble Tin and Lode Cr. Tin Mines, Blocks 351 and 352, head of Lode Cr., 6¼ miles E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 45 (1898), and G.S.M.

6850. ——. *Assoc.with* Wolfram, Cassiterite, and Copper Pyrites, in greisen. *Loc.* Kettle Swamp, trib. of Quart Pot Cr., Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 125, p. 29 (1897), and G.S.M.

6851. ——. *Assoc.with* Molybdite, Wolfram, and Cassiterite, in quartz and greisen. *Loc.* Burnt Hut, Severn R., 6 miles W.byS. of Ballandean Rail. Stn., 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 48 (1898).

6852. ——. *Assoc.with* Molybdite, in quartz. *Loc.* Greenup's, Severn R., Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M.

6853. ——. *Assoc.with* Wolfram, Cassiterite, Iron Pyrites, Mispickel, and Scorodite, in quartz. *Loc.* P.A. 48, Sluices, Severn R., 6 miles W. of Ballandean Rail. Stn. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 191, p. 10 (1904).

6854. ——. *Assoc.with* Gold, Mispickel, Cassiterite, and Wolfram, in quartz and greisen. *Loc.* Pikedale Lode, 10 miles W. of Stanthorpe Rail. Stn. *Co.* Bentinck (*ante*). *Assays: See* No. 3840. *Ref.* G.S.Q. Pubs. 40, p. 4 (1887), and 120, p. 47 (1898).

6855. ——. Coolgarra, 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.**

6856. ——. *Assoc.with* Wolfram, Monazite, Cassiterite, Scheelite, and Manganese-dioxide, with traces of Cuprite, Malachite, Azurite, Iron Pyrites, Mispickel, Limonite, and Scorodite, in irregular masses and defined lodes in greisen. *Loc.* Nettle's Cr. Wolfram Mines, 4 miles E. of and 3 miles S.E. of Coolgarra, and between 10 and 14 miles N.E. of Mt. Garnet Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell (*ante*). *Ref.* B.D.

6857. ——. *Assoc.with* Cassiterite and Wolfram, in diorite. *Loc.* Young American Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 9 (1883).

——. *See further* Walsh and Tinaroo references, No. 6825, etc.

6858. Molybdenite. In small quantities, in quartz masses. *Loc.* Spring Cr., on road to Salisbury Plains Stn., 10 miles W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* B.D.

6858A.——. In quartz lode in Granite and Q. Porphyry. *Loc.* Rail. cutting, $\frac{1}{4}$-mile west of Eurie Cr., 8 miles W. of Bowen. *Co.* Herbert (*ante*). *Ref.* B.D.

6858B.——. In quartz vein in Q. Porphyry and Granite. *Loc.* N. of Mt. Pring, 1 mile S. of rail. line, 10 miles W. of Bowen. *Co.* Herbert (*ante*). *Ref.* B.D.

6858C.——. As lode in granite country. *Loc.* Head of Saltwater Cr., Salisbury Plain, 20 miles W. of Bowen. *Co.* Herbert (*ante*). *Ref.* B.D.

6859. ——. Halifax Bay, 36 miles N.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.M.

6860. ——. *Assoc.with* Bismuth and Wolfram. Wandoo and Bolingbroke Stations, about 25 miles E.N.E. of Nebo, and about 40 miles S.W.byS. of Mackay. *Co.* Wodehouse; *Dist.* **Leichhardt.** *Ref.* L.C.B.

6861. ——. Cressbrook, 3 miles N.byE. of Toowoomba Rail. Stn., 82 miles (by rail and road) N.N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* L.C.B.

6862. ——. Fry and Stoodleigh's Mine, Maxwelton Goldfield, 35½ miles S.W. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* L.C.B.

6863. ——. In quartz lode. Maxwelton Goldfield (*ante*). *Ref.* G.S.M.

6864. ——. *Assoc.with* Wolfram, Tungstite, Wad, Native Bismuth, Bismutite, with traces of Copper Pyrites, Tenorite, Iron Pyrites, Hematite, etc., in defined quartz lodes, in greisen and mudstone. *Loc.* Rosedale Wolfram Mines, Rosedale, 34 miles (by rail) N.W. of Bundaberg, North Coast line. *Co.* Flinders; *Dist.* Port Curtis. *Ref.* B.D.

6865. ——. *Assoc.with* Gold and Copper Pyrites, in calcite and quartz. *Loc.* Mt. Rose Reef, Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.M.

6866. ——. *Assoc.with* Gold, Silver, Native Copper, Copper Pyrites, Redruthite, Cuprite, Azurite, Malachite, Iron Pyrites, Ironstone, and Galena, in granitic rock. *Loc.* Moonmera Copper Mines, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pubs. 143, p. 27 (1899), and 195, pp. 18-22 (1904).

6867. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Gt. Eastern 2 S. Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* **Wide Bay.** *Ref.* B.D.

Molybdenum (Mo.). *Atom.wt.* 96·0. *Sp.gr.* 9·01. *Colour*, silver-white. Brittle.

MINERALS: *See* Molybdenite, Molybdite, and Wulfenite, the first for notes.

USES: When certain iron and molybdenum ores are smelted together ferromolybdenum is formed and chromium steel is rendered self-hardening if an addition of this alloy is made to the smelting charge. Molybdenum is also used in the manufacture of dyes, pigments, medicines, and chemical reagents. Molybdenite, the sulphide, is the principal molybdenum-bearing ore, Molybdite being a secondary mineral resulting from the oxidation of Molybdenite. The presence of copper in molybdenum ores lessens their commercial value.

—— oxide. *See* Molybdite.

—— sulphide. *See* Molybdenite.

Molybdic Ochre. *Syn.* Molybdite, *which see.*

Molybdine. *Syn.* Molybdite, *which see.*

Molybdite. *Syn.* Molybdic Ochre, Molybdine. *Compo.*, Oxide of molybdenum. *Colour*, yellowish. Dull. *H.* = 1-2. *Sp.gr.* = 4·5. *Contents* (*max.*), Molybdenum 66 per cent.

6868. ——. *Assoc.with* Gold and Molybdenite, in quartz reef. *Loc.* Old Chowey Mine, Chowey Goldfield, 6 miles N. of Didcot Rail. Stn., 74 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.M.

6869. ——. *Assoc.with* Gold and Molybdenite. *Loc.* Mt. Venus Mine, Mt. Steadman, 4½ miles W. of Biggenden Rail. Stn. (Gayndah br. line). *Co.* **Cook** (*ante*). *Ref.* G.S.M.

6870. ——. *Assoc.with* Molybdenite and Wolfram, in quartz lodes and in greisen *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbullah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M. and B.D.

6871. ——. *Assoc.with* Wolfram, Molybdenite, Native Bismuth, Bismutite, Scheelite, Mispickel, and Scorodite, with traces of Copper Pyrites, Tenorite, Chrysocolla, Iron Pyrites, etc., in irregular quartz masses in greisen. *Loc.* Bamford Wolfram Mines, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* A.R., p. 101 (1907), and B.D.

6872. ——. *Assoc.with* Molybdenite, Wolfram, and Cassiterite. *Loc.* Burnt Hut, 6 miles W.byS. of Ballandean, 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* B.D.

6873. ——. *Assoc.with* Molybdenite, in quartz. *Loc.* Greenup's, Severn R., Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M.

Mommedah Bore. *See under* Artesian Bores. No. 432.

Mona Park (Pors. 63, 64, 67), S.S.E. of Brisbane. *Min.Ref.* Coal, *see* 1777B; *see also under* Coal Bores.

Mona Run Bores. *See under* Artesian Bores. No. 341.

Monakoff Group of Copper Mines, Cloncurry. *Includes only* M.F. 15. *Min.Ref.* Bornite, *see* 412A; Iron Pyrites, 4919A; Redruthite, 7207A; Tile Ore, 2493C.

Monal Goldfield—

SITUATION: *See maps*, Pls. 2, 3, 34. The field is about 42½ miles S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. Centre about *Lat* 24° 3′ S., *Long.* 151° 2′ E.

PROCLAMATION OF FIELD: First gazetted, 2nd October, 1891; last alteration, 6th November, 1908, as follows:—Commencing on Mount Graarbi, and bounded thence by the western watershed of Monal Creek northerly to Dawe's Range; thence by a line northerly to the S.W. corner of por. 315, par. of Dalgalgil; thence by a line E. to Koolkooroom Creek, by that creek downwards to Dalgalgil Creek, by that creek downward to N.W. corner of por. 7V, par. of Milton, by the S.W. boundaries of por. 7V and 11V south-easterly to the range forming the northern watershed of Station, Deception, and Glassford Creeks, by that range south-westerly to Dawe's Range, by Dawe's Range to the extreme east corner of por. 1V, par. of Monal, on the N.W. side of a road running between pors. 1 and 2, by that road southerly to Monal Creek, by that creek upwards about 40 chains to the W. boundary of por. 1, by that boundary N. 283 chains; thence W. about 90 chains to the confluence of Broad Creek with Monal Creek; thence by Monal upwards to a point 3 miles southerly from Mount Graarbi; and thence by a line northerly to the point of commencement.

AREA: 66,300 acres = 103 19/32 sq. miles.

PRINCIPAL MINING CENTRES: Mt. Hector Goldfield, including Mt. Hector Copper Mines, *which see.*

MINERAL STATISTICS: *Included in* "Other Goldfields." *See tables and diagram*, Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: Gold, *see* 4262, 4263A; Copper (Azurite) 244A, (Bornite) 434, (Copper Pyrites) 2237B, (Cuprite) 2473A, (Malachite) 6356A, Tenorite, 7739A; Iron (Iron Pyrites) 5364A, (Ironstone) 5617B.

GEOLOGICAL PUBLICATIONS: *Nil.*

WARDEN: Stationed at Gladstone; INSPECTOR OF MINES: Stationed at Rockhampton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Monarch P.P.A. (116, etc.), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235M; Hematite, 4769F; Iron Pyrites, 5327G; Limonite, 5895B; Malachite, 6339P.

—— Reef, Northcote, Hodgkinson Goldfield. *Min.Ref.* Copper Pyrites, *see* 2152; Galena, 2762; Gold, 3760.

—— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1102; Hornblende 4833.

—— Senior M.C. (352), Cloncurry. *Min.Ref.* Calcite, *see* 494; Copper Pyrites, 2207; Covelline, 2376; Iron Pyrites, 5132; Limonite, 5867; Malachite, 6268; Redruthite, 7291; Tile Ore, 2557.

Monastery M.L. (467), Cloncurry. *Min.Ref.* Azurite, *see* 206; Cuprite, 2449; Malachite, 6262, 6263; Redruthite, 7287.

Monazite. *Compo.*, Phosphate of Cerium, Lanthanum, and Thorium. *Colour*, brownish, yellowish, reddish. Resinous. Translucent. *H.* = 5-5·5; *Sp.gr.* = 4·9-5·2.

Uses: The thoria contained in Monazite is used in the manufacture of incandescent gas mantles, and the value of the mineral depends on the amount of this oxide present. The percentage of thoria is usually about 3 per cent., but the Queensland Monazite samples treated contain less than this. *See* reference below. *See also note under* Thorium.

Mineral and Geological Note: Monazite is a frequent associate of Wolfram in lode deposits, but is also found with Molybdenite, Cassiterite, Mispickel, Iron Pyrites, Scheelite, Beryl, Fluorspar, Calcite, Biotite, Quartz, and Chlorite, the associated rocks being granite and greisen. In beach sands it has been found with gold, platinum, tin, osmiridium, etc. The percentage of thorium present in Monazite is always very small, the other two elements mentioned above making up the great bulk of the mineral compound. A sample, not cleaned from gangue, yielded 2·6 per cent. of Thoria, and 56·1 per cent. of oxides of the Cerium and Yttrium groups. For "Monazite in Queensland," *see* G.S.Q. Pub. No. 196, p. 12 (1905).

Note: The discovery of this mineral was made by B. Dunstan in 1904, in alluvial deposits of tin at Fossilbrook, and in the same year in wolfram lodes at Bamford. There are now several localities where Monazite deposits are known to occur, but no endeavour has been made to work them. The percentage of thoria in the Monazite is not high enough to encourage miners to prospect the lodes, and the quantities in sight in the various individual deposits do not seem to offer sufficient inducement to companies to establish works for its extraction.

6874. ——. *Assoc.with* Wolfram, Biotite, and Topaz, in quartz lode. *Loc.* Fingertown, 9 miles N. of Nymbool, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* B.D.

6875. ——. *Assoc.with* Wolfram, Molybdenite, Cassiterite, Mispickel, and Iron Pyrites, in quartz and mica in greisen country. *Loc.* California Cr. Mine, nr. Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

6876. ——. *Assoc.with* Wolfram and Cassiterite. *Loc.* Emerson's Wolfram Mine, nr. head of California Cr., 6 miles E. of Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6877. ——. *Assoc.with* Mica, Chlorite, Clay, and Quartz. *Loc.* Emuford, Emu Cr., br. of Walsh R., 11 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Tin = 11·6 per cent., Tungstic Acid = 1·0 per cent. *Ref.* A.R., p. 120 (1907).

6877A.——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Emu Creek, 3 miles N. of Fossilbrook, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6878. ——. In beach deposits. *Loc.* South side of mouth of Johnstone R., Geraldton, 130 miles N.W. of Townsville. *Co.* Nares; *Dist.* Cook. *Analysis:* 2·6 per cent. of Thoria, and 56·1 per cent. of Oxides of Cerium and Yttrium. *Ref.* G.S.Q. Pub. 196, p. 12 (1905).

6878A.——. *Assoc.with* tin. *Loc.* Broadwater Cr., Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* B.D.

6879. ——. *Assoc.with* Wolfram, Molybdenite, Wad, Cassiterite, Scheelite, with traces of Cuprite, Malachite, Azurite, Mispickel, and Scorodite, in irregular masses of quartz in greisen country. *Loc.* Nettle's Cr., 4 miles E. and 3 miles S.E. of Coolgarra, between 10 and 14 miles N.E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* B.D. Note: The mineral is radio-active.

6880. ——. Six miles N. of Innot Springs, nr. Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

6881. ——. *Assoc.with* Gold, Silver, Cassiterite, and Platinum, in beach deposits. *Loc.* Currumbin Cr. to Pt. Danger, S. Coast of Queensland, 69 miles (by rail) S.S.E. of Brisbane. *Co.* Ward; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 198 (1905).

6882. ——. In beach deposits. *Loc.* Tweed R., Tweed Heads, 69 miles (by rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref. and Analyses*, G.S.Q. Pub. 196, p. 11 (1905). *Min. Note:* A sample of concentrates from the beach sand yielded 1·2 per cent. of Monazite, associated with Tantalite, Zircon, Ilmenite, Magnetite, etc.

Monazite Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1102A.

Monduran Firebrick, Tile, and Pottery Proprietary, Ltd., 19 miles N.W. of Gladstone. *Min.Ref.* Carbonaceous Shale, *see* 752A; Fire-clay, 2651B.

Mondure, S.byE. of Gayndah. *Min.Ref.* Opal, *see* 6970A.

—— Stn., 12 miles W.N.W. of Wondai Rail. Stn. *Min.Ref.* Opal (precious), *see* 6937.

Monitor Group of Copper Mines, Cloncurry. *Includes* Monitor, Monitor N., and Monitor S. M. Leases, Wooluma, George, and Mt. Devoncourt M. Leases. *Min.Ref.* Azurite, *see* 167, 168; Copper Pyrites, 2090; Cuprite, 2407; Limonite, 5780; Malachite, 6139, 6140; Redruthite, 7241; Tile Ore, 2519.

—— Copper M.L. (419), Cloncurry. *Min.Ref.* Azurite, *see* 167; Limonite, 5780; Malachite, 6139; Redruthite, 7241; Tile Ore, 2519.

Monkey No. 1 Bore. *See under* Artesian Bores. No. 200.

Monkira Co. Gregory North Dist. *See map*, Pl. 20.

Monkland 7 and 8 S.L. (597), Gympie Goldfield. *Min.Ref.* Gold, *see* 4461.

—— 1 S. and Abyssinia L. (518), Gympie Goldfield. *Min.Ref.* Gold, *see* 4460.

—— Bore. *See* Gympie Goldfield, *under* Gold Bores. *See also under* Gympie for geological note.

—— Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

—— ——, Gympie Goldfield. *Min.Ref.* Gold, *see* 4518.

—— ——, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3761.

Monkville, Caboolture. *Min.Ref.* Coal, *see* 1715.

Monsildale. Par. of (Pors. 13, 22, and 7), N.byW. of Esk. *Min.Ref.* Cinnabar, *see* 1548; Copper, 1855.

Monsildale Silver-Lead Lode (Por. 46), 35 miles N.byW. of Esk. *Min.Ref.* Galena, *see* 3026; Gold, 4190; Iron Pyrites, 5329B; Mispickel, 6772; Silver, 7506; Zinc Blende, 8173.

Montalbion—

Situation: *See maps*, Pls. 8, 9, 22. The Mining Centre is about 7 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Lat.*, 17° 23′ S.; *Long.*, 145° 12′ E.

Discovery: Montalbion Silver Mine discovered about 1884.

Population: 26 (estimated in 1910 by Warden. No official estimate since).

Mineral Statistics: Silver and Lead—included in Herberton Returns. *See* Pls. 37, 38, 46, 46A.

Mineral References: Silver, *see* 7451, (native) 7549, Cerargyrite 1179, 1180; Mercury (Cinnabar), 1542; Lead (Anglesite) 22-27, (Cerussite) 1193, Galena) 2767-2773, Lead) 5724, (Minium) 6580, (Pyromorphite) 7141; Copper (Bournonite) 437, (Chalcanthite) 1320, (Copper Pyrites) 2153, 2154, (Tetrahedrite) 7761; Tin (Cassiterite) 875-877, Scheelite, 7343; Zinc (Goslarite) 4561, (Willemite) 7925, (Zinc Blende) 8081; Iron (Marcasite) 6503, (Mispickel) 6688, (Pyrrhotite) 7155, (Scorodite) 7365; Limestone, 635; Other Minerals—Chlorite, 1434; Mica, 6556.

Geological Note: The rocks in the country round Montalbion are a series of shales, sandstones, and grits, in association with porphyry. It is in the porphyry that the silver-lead deposits of Montalbion and Silverfield occur. *See* G.S.Q. Pub. 119 for details.

Publications: Reports—Nos. 48 (1888), 11-119 (1897); Map No. 220 (1909). *See under* Geol. Surv. Pub. List for title; *see also under* Govt. Mining Jour. Special Reports, No. 4.

Warden and Inspector of Mines: Both stationed at Herberton.

—— and Neighbouring Silver-Lead Mines. *See under* Govt. Ming. Jour., Report No. 4.

—— Silver Mine, 7 miles S.W. of Stannary Hills Rail. Stn. *Min.Ref.* Anglesite, *see* 24; Copper Pyrites, 2154; Galena, 2769.

Monte Carlo (Sea View) Mine, Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3667A; Iron Pyrites, 5026A.

—— Christo Reef, Normanby, S.S.W. of Cooktown. *Min.Ref.* Gold, *see* 3683.

—— —— ——, Normanby Goldfield. *Min.Ref.* Gold, *see* 4121.

—— —— ——, Talgai Goldfield. Discovered in 1864. *Min.Ref.* Gold, *see* 3858.

—— Video Mines (Silver, Lead, Copper), 3 miles E. of Ashtonville, N.W. of Mungana. *Min.Ref.* Cerussite, *see* 1216; Copper carbonate, 1901; Limonite, 5849; Minium, 6592.

Montgomerie Sub-artesian Bore. *See under* Artesian Bores. No. 311.

Monumental and Architectural Stones in Queensland. *See under* Supplementary Report List, No. 111.

Moogerah, Fassifern. *Min.Ref.* Magnetite, *see* 6031; Pleonaste, 7592.

Moola Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 118.

Moolboolaman, Mt. Perry. *Min.Ref.* Calcite, *see* 471.

Mooloolah. Par. of (Sel. 135), Nambour. *Min.Ref.* Coal, *see* 1716.

Moonda Park, nr. Thompson R., 75 miles S.W. of Longreach. *Min.Ref.* Coal, *see* 1709B.

Moondilla Goldfield, about 10 miles S. of Adavale, N.N.W. of Charleville. Centre about *Lat.* 26° 5′ S.; *Long.* 144° 42′ E. *Min.Ref.* Chalcedony, *see* 1364; Gold, 4385. This field has also been known as Adavale, Hoomooloo, and Gumbardo.

Geological Note: The gold occurs in a cemented wash, associated with sandstones, grits, and conglomerates belonging to the "Desert Sandstone" Formation (Upper Cretaceous). From its appearance, the gold seems to have been precipitated from solution, and not as an alluvial accumulation. *See* G.S.Q. Pub. No. 78 for details.

Moonlight Creek, Croydon Goldfield. *Min.Ref.* Gold, *see* 3532, 3533; Iron Pyrites, 4961A.

—— ——, Nebo (Mt. Britten) Goldfield. *Min.Ref.* Gold (alluvial) *see* 3366, (nugget) 3442.

—— Gully, Two-mile Diggings, Raglan Goldfield. *Min.Ref.* Gold (alluvial), *see* 3386.

—— Reef, Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3645; Molybdenite, 6824.

Moonamarra Bore. *See under* Artesian Bores. No. 262.

Moonie Scrub Bore. *See under* Artesian Bores. No. 105.

Moonmera. *See maps,* Pls. 2, 3. 20 miles (by rail) S.S.W. of Rockhampton. *Min.Ref.*, Coal, *see* 1804; Gold (alluvial), 3402, 3403; Hornblende, 4847; Limonite, 5919; Magnesite, 5963; Vermiculite, 7917.

Geological Note: The rocks at the base of Mommera Range are principally granite and syenite, above which in places there are irregular masses of copper-bearing breccias and sandstones. Over these, unconformably, have been deposited the Trias-Jura (Ipswich) shales, sandstones, and tuffs, the peaks in the range being composed of sandstones belonging to this formation. *See* G.S.Q. Pub. No. 195 for details and maps. *Also* G.S.Q. Pub. 150, p. 1 (1900).

Moonmera Copper Mines, 20 miles S.S.W. of Mt. Morgan. Discovered by Messrs. Clancy in 1898. *Min.Ref.* Ankerite, *see* 67; Atacamite, 138; Azurite, 254; Calcite, 550; Native Copper, 2012; Copper Pyrites, 2307; Cuprite, 2480; Galena, 3067; Halite, 4659; Iron Pyrites, 5415; Ironstone, 5629; Malachite, 6373; Molybdenite, 6866; Redruthite, 7304; Tenorite, 7742; Tetrahedrite, 7778.

Moonstone Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3533.

Moonstone (Oriental). *See* Sapphire, *under* Corundum.

Moorabindah Bore. *See under* Artesian Bores. No. 235.

Moran's Gully, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

Moraree. (*See* Murarrie.) 7 miles (by rail) E. of Brisbane, Cleveland Br. line. *Min.Ref.* Coal, *see* 1773; Gypsum, 4629.

Moratau (Ferguson) Is., Brit. New Guinea. *Min.Ref.* Cinnabar, *see* 1565; Gold (alluvial), 3422; Sulphur (native), 7670.

Moreston Downs Sub-artesian Bores. *See under* Artesian Bores. No. 342.

Moreton District—

Situation, Etc.: *See maps*, Pls. 6, 7. *Lat.*, 26° and 29° S.; *Long.*, 151° and 154° E. The extreme south-eastern part of Queensland. Bounded on the N. by the districts of Burnett and Wide Bay, on the E. by the Pacific Ocean, on the S. by the State of New South Wales, and on the W. by the district of Darling Downs. Principal Rivers: Maroochy, Mooloolah, Caboolture, North Pine, South Pine, Brisbane (tribs. Stanley, Lockyer, and Bremer), Logan, Albert (trib. Coburg), Pimpama, Coomera, and Nerang.

Area: (in sq. miles) 8,828. With islands included, 9,102.

Principal Mining Centres: Gold and Mineral Fields—Nanango (*in part*), and Enoggera. Coalfields—Ipswich, West Moreton, and Beaudesert, *which see.*

Counties:

Canning Co., Caboolture, Caloundra, Crohamhurst, Kilcoy, Landsborough, Woodford, Yandina.

Cavendish Co., Biarra (Copper), Blackbutt, Blackbutt Range, Bum Bum, Cooyar, Crow's Nest, Djuan, Esk (Gallanani), Eskdale, Hampton, Harlin, Helidon (Spa Water), Mooretown, Mt. Esk, Nanango Goldfield (*in part—see also* Fitzroy Co. *See also under* Burnett Dist.); Pechey, Ravensbourne, Round Mountain, Taromeo (Gold), Yarraman Cr. (Gold).

Churchill Co., Boonah, Dugandan, Fernvale, Gatton, Grandchester, Harrisville, Laidley, Lowood (Garnets), Marburg, Munbilia, Normanby, Peak Crossing, Rosewood (Coal), Walloon (Coal) (Collieries—Walloon and Caledonia).

Stanley Co., Bundanba (Collieries—Aberdare, Blackheath, Bogside, Bonnie Dundee, Borehole, Box Flat, Braeside, Denham, Dinmore, Ebbw Vale, Fairbank, Fernie Cr., Mafeking, New Chum, Noble Vale Nos. 1 and 2, Old West Moreton, Rhondda, Swanbank, and Whitwood); North Ipswich (Collieries—Donnybrook, Eastwood, Haighmoor, new Colliery, Tivoli, Waterstown, and Wright's); Bald Hills, Blackstone, Brisbane North, Brisbane South, Cleveland, Goodna, Indooroopilly, Moreton Island (Coal), Mt. Coot-tha, Mt. Crosby, North Pine, Nundah (Nundah Colliery), Pine Mountain, Sandgate, Tingalpa, Toorbul Point.

Ward Co., Alberton, Beaudesert, Beenleigh, Bethania Junction, Burleigh, Coomera, Nerang, Pimpama, Southport.

Mineral References and Statistics: *See under* names of Principal Mining Centres.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 343.

Moreton Island, 41 miles N.N.E. of Brisbane. Centre about *Lat.* 27° 02′ S.; *Long.* 153° 28′ E. *Min.Ref.* Cuprite, *see* 2471; Coal, 1767, 1768; Fulgurites, 2686.

Geological Note: The island is made up of rocks belonging to the Ipswich Series (Trias-Jura), in which a number of bands of coal are to be seen near the Cape Moreton Lighthouse. Mt. Tempest, a prominent landmark, is composed of an altered acid volcanic rock associated with the Trias-Jura sandstones. There are large areas of blown sand on the island, and fulgurites are common in the sand dunes at Tangalooma.

—— Telegraph Stn., Batavia R. *Min.Ref.* Ironstone, *see* 5520.

Morgan and Reid's Workings, 8 miles W.byS. of Gladstone. *Min.Ref.* Manganese-dioxide, *see* 6467.

Morganite Mine, Mt. Morgan (Crocodile) Goldfield. *Min.Ref.* Gold, *see* 4369; Iron Pyrites, 5424.

Morgan's Block Shaft (Golden Gate Reef), Croydon Goldfield. *Min.Ref.* Gold, *see* 3509.

—— Gully, "The Springs," Clermont. *Min.Ref.* Gold (alluvial), *see* 3345.

Moriarty's Range, Koroit Opal Field. *Min.Ref.* Opal (precious), *see* 6954.

Morinish Goldfield—

Situation: *See maps,* Pls. 2, 3. The field is about 25 miles N.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. Centre about *Lat.* 23° 10′ S.; *Long.* 150° 13′ E.

Discovery: Gold was discovered on a spur of Morinish Range, 35 miles W. of Rockhampton, in 1866, by Smith Bros., and a "rush" took place in January of the following year (1867).

Proclamation of Field: First gazetted, 1st November, 1871; last alteration, 7th August, 1886, as follows:—Commencing at the south-eastern corner of the Morinish Goldfield Reserve; bounded on the south by a line bearing west four miles; on the west by a line bearing north three miles one and a quarter chains; and again on the south by a line bearing west three miles twenty-two and a-half chains to the south-west corner of portion 2v; on the west by the western boundary of the parish of Morinish bearing northerly about five and a-half miles to the southern boundary of selection 1846; on the north by part of selection 1846 and part of portion 1v bearing east two miles fifty chains to the boundary of selection 678; and again on the east by part of that selection and by selection 1498, bearing south about two miles thirty-five chains to the north-east corner of selection 1902; and again on the north by the southern boundary of selection 1498 bearing east two miles thirty-one chains; on the north-east by a Government road and by the eastern boundary of selection 1840 bearing south-easterly two and three-quarter miles to the south-east corner of that selection; and again on the south by part of that selection bearing west about thirty-six chains; and again on the east by a line bearing south four miles fifty-two chains and fifty-four links to the point of commencement;—including Morinish Goldfield Reserve No. 2 (otherwise known as Blackfellow's Gully Goldfield), and exclusive of all alienated lands.

Area: 24,960 acres = 39 sq. miles.

Principal Mining Centre: Blackfellow's Gully.

Mineral Statistics: *Included in* "Other Goldfields" *in tables and diagram,* Pls. 36, 46, 46a, 47.

Statistical Note: *See under* Rockhampton.

Mineral References: Gold (alluvial) 3394, (reef) 4332-4336; Lead (Galena), 3061-3062; Copper (Native) 2010, (Pyrites) 2297, (Malachite) 6366, (Redruthite) 7303, (Tenorite) 7740; Zinc Blende, 8204; Chromite, 1485; Iron (Pyrites) 5407, 5407a, (Pyrrhotite) 7163. Other Minerals—Analcime, 11; Calcite, 536; Natrolite, 6903.

Geological Note: The country rocks consist of slates, etc., belonging to the Gympie Formation, and granite.

Geological Publications: Report—No. 22 (1885). *See under* Geol. Surv. Pub. List for title. *See also under* Govt. Ming. Jour., Report No. 23, and Supplementary Report List, No. 7.

Warden and Inspector of Mines: Both stationed at Rockhampton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Morning Light Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3500a.

—— Star M.L. (306), Cloncurry. *Min.Ref.* Azurite, *see* 162a; Limonite, 5775b; Malachite, 6134b; Redruthite, 7236b; Tile Ore, 2518a.

—— —— Mine, Ridgelands Goldfield. *Min.Ref.* Gold, *see* 4341.

—— —— Reef, Mt. Remarkable, Cape R., Goldfield. *Min.Ref.* Gold, *see* 4051.

Mornington Is. *See maps,* Pls. 20, 21. Sixty-eight miles N. of Burketown. *Co.* Wellesley; *Dist.* Burke.

Geological Note: Rocks comprise sandstones, etc., belonging to the "Desert Sandstone" Formation (Upper Cretaceous).

Morris Cr., Cloncurry. *See* Serpent Hill and Rockland Group of Copper Mines.

—— Run, W.S.W. of Bowen. *Min.Ref.* Gold, *see* 4078; Tourmaline, 7861.

—— and Colley's Claim, Gilberton. *Min.Ref.* Telluride of Gold and Silver, *see* 7702.

—— and Shaw's Manganese Workings, S.S.W. of Gladstone. *Min.Ref.* Manganese-dioxide, *see* 6463.

Morrison Co.'s Sels. (165 and 166), Argentine Silver Field. *Min.Ref.* Cerussite, *see* 1273; Ironstone, 5577; Lead Gossan, 5729; Minium, 6618, 6619.

Morstone Co. Burke Dist. *See map,* Pl. 20.

Mortar Island, 45 miles N.E.byE. of St. Lawrence. *Min.Ref.* Limestone, *see* 689; Marble, 601.

GEOLOGICAL NOTE: Limestone make up the great mass of the island. Thin slate bands are interstratified with the limestone beds on the south-east end, and numerous diorite dykes traverse limestone and slate in other parts. *See* G.S.Q. Pub. No. 194 for details.

Morven Town Sub-artesian Bore. *See under* Artesian Bores. No. 128.

Moscow Selection Bores. *See under* Artesian Bores. No. 344.

Moselle Downs Bore. *See under* Artesian Bores. No. 332.

Mosman Co. Cook Dist. *See map,* Pl. 8.

Mosquito Cr. Silver-Lead Lodes, S.W.byS. of Charleston, Etheridge Goldfield. *Min.Ref* Galena, *see* 2756A, 2756B; Limonite, 5840B; Massicot, 6525C; Silver, 7450B.

Moss Vale Stn., S.W. of Bowen. *Min.Ref.* Copper Pyrites, *see* 2240B; Gold, 4078A; Iron Pyrites, 5276A; Limonite, 5879B.

Moturina (Mewstone) Island, Brit. New Guinea. *Min.Ref.* Limestone, *see* 707.

Motha Mt., nr. Gympie. *Min.Ref.* Iron Pyrites, *see* 5471; Pyrrhotite, 7165.

Mott's (Gladevale) Bore. *See under* Artesian Bores. No. 185.

Mountain, nr. Double Barrel Cr., S. of Townsville. *Min.Ref.* Limestone (coralline), *see* 720; Marble, 585.

—— Bull Copper Lode, Cattle Cr., W.S.W. of Mackay. *Min.Ref.* Azurite, *see* 229B; Copper Pyrites, 2253B; Malachite, 6325B.

—— Camp, Enoggera, 6½ miles W. of Brisbane. *Min.Ref.* Bismuthinite, *see* 375; Bismutite, 410; Chiastolite, 1417; Galena, 3035A; Gold, 4213-4215; Heulandite, 4820; Hornblende, 4842; Iron Pyrites, 5343, 5344; Malachite, 6349; Minium, 6642; Zinc Blende, 8177, 8178.

—— Cr. Artesian Bore. *See under* Artesian Bores. Nos. 26, 379.

—— Home Group, Cloncurry. *Includes* Mountain Home Freeholds, Lady Norma, Elder Bornite, and Lone Hand Leases. *Min.Ref.* Asbolane, *see* 118; Cuprite, 2389; Garnet, 3151; Malachite, 6086; Manganese-dioxide, 6387; Wad, 7108.

—— —— Mine, Cloncurry. *Min.Ref.* Asbolane, *see* 118; Cuprite, 2389; Garnet, 3151; Malachite, 6086; Manganese-dioxide, 6387; Wad, 7108.

Mountain Maid Centre, Croydon Goldfield. *See* Pl. 26. *Includes* Mountain Maid and Babe Reefs. *Min.Ref.* Cerussite, *see* 1187; Chalcotrichite, 2488; Galena, 2706; Gold, 3535, 3536; Iron Pyrites, 4958; Redruthite, 7254.

—— —— Creek, Percy R., Etheridge. *Min.Ref.* Gold (alluvial), *see* 3236.

—— —— Mine, Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3646.

—— —— ——, Palgrave Goldfield. *Min.Ref.* Gold, *see* 3849.

—— —— —— and Reef, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3678, 3681.

—— —— M.L. (526), Cloncurry. *Min.Ref.* Göthite, *see* 4562; Limonite, 5755; Malachite, 6106; Redruthite, 7215.

—— —— Reef, Croydon Goldfield. *Min.Ref* Cerussite, *see* 1187; Chalcotrichite, 2488; Galena, 2706; Gold, 3536; Iron Pyrites, 4958; Redruthite, 7254.

—— —— ——, Thane's Cr. Goldfield. *Min.Ref.* Gold, *see* 3868; Iron Pyrites, 5129.

—— —— ——, Yatton Goldfield. *Min.Ref.* Calcite, *see* 513; Gold, 4176; Siderite, 7417.

—— —— Silver Mine, 5 miles S. of Montalbion. *Min.Ref.* Anglesite, *see* 27; Galena, 2773; Lead, 5724; Silver, 7455.

—— Paddock Sub-artesian Bore. *See under* Artesian Bores. No. 271.

—— Rise Mine, Barmundoo Goldfield. *Min.Ref.* Gold, *see* 4238; Iron Pyrites, 5357.

Mountaineer Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3761.

—— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 908; Galena, 2784; Iron Pyrites, 5066.

Mourilyan Harbour—

Situation: *See maps*, Pl. 8, 9. The harbour is about 122 miles N.W. of Townsville. *Co.* Nares; *Dist.* Cook. *Lat.*, 17° 35′ S.; *Long.*, 146° 5′ E.

Harbourage: The navigable channel is 70 ft. wide, having a depth at L.W.S. of 18 ft. 6 in. Spring tides vary from 7 ft. to 10 ft.; Neaps from 2 ft. to 4 ft. Spring tides run in and out of the harbour at the rate of 6 or 7 knots per hour.

Mineral Reference: Manganese-dioxide, *see* 6413.

Geological Note: In the neighbourhood clay schists are the prevailing rocks, in which gold-bearing reefs are known to exist.

Mowarra Co. Gregory North Dist. *See map*, Pl. 20.

Mowbray Cr. Runs into Dry R., trib. of Upper Herbert R., 12 miles S.S.W. of Herberton. *Min.Ref.* Cassiterite, *see* 1133, 1134.

—— Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Mrs. Alison's Mine, Sugarloaf, Stanthorpe. *Min.Ref.* Copper Pyrites, *see* 2191; Galena, 2837; Iron Pyrites, 5116.

—— Trouston's Sel., 2½ miles from Kingston Rail. Stn. (South Coast line). *Min.Ref.* Kaolin, *see* 5698.

Mount Abundance and Railway Line (between), 26 miles W. of Roma. *Min. Ref.* Coal, *see* 1707.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 345.

—— Adler, 7 miles N. of Einasleigh. *Min.Ref.* Gold (alluvial), *see* 3211a.

—— Agnes, Irvinebank. *Min.Ref.* Cassiterite, *see* 866.

—— —— Mine, Bompa Goldfield. *Min.Ref.* Gold, *see* 4247.

—— Alexander, Mt. Morgan Goldfield. *Min.Ref.* Copper Pyrites, *see* 2311; Gold, 4369a; Hematite, 4800; Iron Pyrites, 5425; Ironstone, 5630; Limonite, 5920.

Geological Note: The rocks of Mt. Alexander comprise quartzites, shales, and chloritic and serpentinous slates, together with dykes of dolerite and gabbro. A large formation of gold-bearing ironstone is associated with these rocks on the surface, and which is also copper-bearing at water level. *See* G.S.Q. Pub. 132 for details.

—— Alfred Bore. *See under* Artesian Bores. No. 346.

—— Alice, nr. Gigoomgan Stn. *Min.Ref.* Azurite, *see* 259; Malachite, 6384; Tile Ore, 2571. *Geological Note.*—Diorite is the prevailing rock. *See* G.S.Q. Pub. No. 1, pp. 16, 17.

—— —— P.C., Maxwelton Goldfield. *Min.Ref.* Gold, *see* 4261.

—— Allen, Gigoomgan Run. *Min.Ref.* Copper, *see* 1864; Nickel Ore, 6908.

—— —— Mine, Gebangle. *Min.Ref.* Gold, *see* 3579; Iron Pyrites, 4981.

—— Alma Station, 30 miles S.W.byW. of Gladstone. *Min.Ref.* Actinolite, *see* 4866; Malachite, 6356; Magnetite, 6038.

—— Alto, 40 miles S.W. of Port Douglas. *Note:* Tin discovered here by Mr. J. V. Mulligan in September, 1892. *Min.Ref.* Cassiterite, *see* 838.

Mount Amos Group of Tin Mines—

Situation: *See maps*, Pls. 8, 9, Annan Tinfield. *Includes* Mt. Amos, Sullivan and Party's, Owen and Davidson's, Keating and Madden's, Mt. Browning, Fiery Star, Murray and McArdle's, Gladstone and Creighton Tin Mines, *which see.*

Mineral Reference: Cassiterite, *see* 790-799; Iron Pyrites, 5023; Mispickel, 6668; Orthoclase, 7035; Talc, 7671, 7672; Tourmaline, 7828-7836; Wolfram, 7928, 7929.

Geological Note: The country rock is granite, in which felspar is occasionally present as very large crystals. The lodes carry tin in a quartz matrix, usually associated with tourmaline, but sometimes with wolfram. *See* G.S.Q. Pubs. Nos. 35, 66, and 210 for details.

—— —— Tin Mine, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 794a; Mispickel, 6668; Talc, 7672; Tourmaline, 7833; Wolfram, 7929.

——Angus, Croydon Goldfield. *Min.Ref.* Gold, *see* 3534; Graphite, 4577.

—— Archer, Targinnie. *Min.Ref.* Gold, *see* 4311.

—— Bobunga, Cloncurry. *Min.Ref.* Cuprite, *see* 2401a; Malachite, 6126.

Mount Barker Silver Mine, 10 miles W. of Eungella Range Rail. Stn. *Min.Ref.* Azurite, *see* 230; Calamine, 444; Cerussite, 1286; Copper Pyrites, 2254; Iron Pyrites, 5300; Galena, 3011; Malachite, 6324; Mispickel, 6760; Zinc Blende, 8168.

GEOLOGICAL NOTE: The country rocks consist of greywackes and quartzites. Two silver-bearing lodes occur on the mount, and are made up of an ironstone-quartz-felspathic gangue containing galena, mispickel, copper pyrites, zinc blende, and iron pyrites in varying proportions. *See* G.S.Q. Pub. No. 181 for details and plan.

Mount Bartle Frere, and Reef, W.byN. of Geraldton. *Min.Ref.* Gold (alluvial), *see* 3220A, (reef) 3786; Ironstone, 5533.

GEOLOGICAL NOTE: The mountain is composed of granite, at the base of which there are slates, quartzites, etc., of undetermined age, both igneous and sedimentary rocks being partly covered by flows of basalt. *See* G.S.Q. Pubs. Nos. 45, 89 for details.

—— Barunda, 1 mile E.N.E. of Fisherton. *Min.Ref.* Amethyst, *see* 7166; Cassiterite, 951; Lepidolite, 5733; Rose Quartz, 7199.

—— Bassett Estate Sub-artesian Bore. *See under* Artesian Bores. No. 97.

—— Beardmore, Balcomba Range. *Min.Ref.* Nepheline, *see* 6906.

—— Benham, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1154; Galena, 2968.

—— Bennett (4 miles from), Langmorn Goldfield. *Min.Ref.* Azurite, *see* 247A; Bornite, 435A; Limonite, 5908A; Malachite, 6358A.

Mount Biggenden, 58 miles (by rail and road) W. of Maryborough. *See* Biggenden Gold and Bismuth Mine for additional information.

GEOLOGICAL NOTE: The rocks about the Mount comprise slates, tuffs, and limestones, of Gympie Formation (Permo-Carboniferous), and granite. The Biggenden bismuth deposits are between slate and limestone near the granite, and are associated with masses of magnetite. Other deposits of bismuth and gold occur under similar conditions in the neighbourhood. *See* G.S.Q. Pubs. Nos. 60 and 173 for details.

MINERAL REFERENCES: Actinolite, *see* 4855; Aragonite, 86; Bismuth (native), 326; Bismite, 311; Bismuthinite, 357; Bismutite, 379; Calcite, 474-475; Chalcedony, 1339; Chlorite, 1427; Dolomite, 2585; Epidote, 2592; Erythrine, 2619; Eulytite, 2621; Felspar, 2627; Galena, 2724; Gold, 3597; Hematite, 4696; Hornblende, 4824; Iceland Spar, 581; Iron Pyrites, 4997; Kaolin, 5672; Limestone, 625; Lollingite, 5942; Magnetite, 5976; Manganese-dioxide, 6399; Mispickel, 6655; Olivine, 6920-6921; Scorodite, 7362; Tourmaline, 7822; Viridite, 7918.

—— —— (W. of granite ridge, nr.), 4½ miles W. of Biggenden Rail. Stn. *Min. Ref.* Copper carbonate, *see* 1881; Magnetite, 5977.

—— —— (1 mile N.N.E. of). *Min.Ref.* Azurite, *see* 179; Bismutite, 380; Calcite, 476; Copper Pyrites, 2132; Malachite, 6199; Mispickel, 6656.

—— —— (hill, N.E. of). *Min.Ref.* Epidote, *see* 2593; Wollastonite, 8041.

Mt. Birnie Group, Cloncurry. *Includes* Mt. Birnie and Monastery Leases. *Min. Ref.* Azurite, *see* 206; Chrysocolla, 1522; Copper Pyrites, 2203; Cuprite, 2449, 2450; Iron Pyrites, 5133; Limonite, 5864; Malachite, 6262, 6264; Redruthite, 7287, 7288.

—— —— M.L. (686, etc.), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1522; Copper Pyrites, 2203; Cuprite, 2450; Iron Pyrites, 5133; Limonite, 5864; Redruthite, 7288; Malachite, 6264.

—— Bismarck, Return Cr., Coolgarra. *Min.Ref.* Cassiterite, *see* 1050.

—— Black, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3267; Magnetite, 6012.

—— Blowhard (Mt. Hope), S.S.W. of Rockhampton. *Min.Ref.* Gold, *see* 4183; Ironstone, 5599A.

—— Bona, nr. Mt. Fox, and close to Kangaroo Hills Stn. *Min.Ref.* Antimony, *see* 75.

—— Boorambool, 3 miles W.byN. of Springsure. *Min.Ref.* Hyalite, *see* 7015.

Mount Bopple, 3 miles N.E. of Gundiah Rail. Stn. (North Coast line). *Lat.*, 25° 50′ S.; *Long.*, 152° 37′ E. *Min.Ref.* Biotite, *see* 310; Coal, 1826, 1827; Graphite, 4610.

Geological Note: Syenitic granite forms the top of the mountain, altered Trias-Jura Coal Measures occurring around the base. Where the Coal Measures are much crampled and intruded by dykes of andesite and syenite the coal seams have been altered to anthracite and graphite. The latter has been worked to a limited extent, and has proved to be of some commercial value.

—— Bornite M.L. (376), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2109; Limonite, 5814; Malachite, 6175; Redruthite, 7263; Tile Ore, 2532.

—— Brisbane, N.N.E. of Esk. *Min.Ref.* Ilmenite, *see* 4904.

Mount Britton Goldfield. *See* Nebo Goldfield.

Mount Brown, Kangaroo Hills Mineral Field. *Min.Ref.* Bismuth Ore, *see* 354; Cassiterite, 1154-1156; Cerussite, 1245-1248; Chrysocolla, 1529; Copper carbonate, 1930-1932; Fluorspar, 2683; Galena, 2978-2980; Hematite, 4748, 4749; Ironstone, 5557; Limonite, 5882; Minium, 6602; Mispickel, 6754; Zinc Blende, 8159.

Geological Note: The rocks on the field embrace slates, schists, quartzites, limestones, etc. The tin lodes occurring in these rocks contain a good deal of calcite and fluorspar, with a little mispickel, and at times a small quantity of bismuth. Silver lodes occur in micaceous schists and clay slates, and contain galena, zinc blende, mispickel, and copper pyrites in a matrix of quartz. *See* G.S.Q. Pub. No. 82 for details and maps.

—— —— Lease (183), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1246; Copper carbonate, 1931; Galena, 2978; Hematite, 4748; Limonite, 5882.

—— Browning Tin Mine, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 796; Hornblende, 4826A; Orthoclase, 7036; Tourmaline, 7837.

—— Buchanan, Oaky Cr., Palmer Goldfield. *Min.Ref.* Gold, *see* 3688; Ironstone, 5518.

—— Buderim, 7 miles E. of Woombye. *Min.Ref.* Opal (common-black), *see* 6987.

—— Bullaganang (Trig Stn.), W. of Stanthorpe. *Lat.*, 28° 35′ S. *Long.*, 151° 24′ E. *Min.Ref.* Mispickel, *see* 6731.

—— Bullock, N.W.byN. of Anakie. *Min.Ref.* Gold (alluvial), *see* 3362.

Mount Cannindah Mineral Field—

Situation: *See maps*, Pls. 4, 5, 34. Nr. head of Cabbage-tree Cr., br. of Splinter Cr., 13 miles S.W.byS. of Many Peaks Rail. Stn. (Boyne-Valley Br. line), 71 miles (by rail and road) S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. Centre about *Lat.* 24° 55′ S.; *Long.* 151° 10′ E.

Proclamation of Field: First (and only one) gazetted, 12th September, 1898, as follows:—Commencing at the north-west corner of Pre-emptive No. 3, New Cannindah, and bounded thence on the north by a line bearing west one mile and a-half; on the west by a line bearing south one mile and a-half; on the south by a line bearing east one mile and a-half to Pre-emptive No. 3; and on the east by that pre-emptive bearing north one mile and a-half to the point of commencement.

Area: 1,440 acres (2¼ sq. miles).

Mineral Statistics: Copper, *see under* Gladstone, *in tables*, Pls. 39, 46, 46A.

Mineral References: Gold, 3657-3659; Silver, 7443-7445; Copper (Azurite), 182-184, (Cuprite) 2422-2424, (Copper, native) 1990, (Copper Pyrites) 2141, (Malachite) 6207-6209, (Tenorite) 7717, 7718; Iron (Iron Pyrites), 5021, 5022, (Limonite) 5837, (Magnetite) 5984; Limestone, 629-631.

Geological Note: The country rocks at Mt. Cannindah are sandstones, grits, shales, limestones, and basalt, the latter being intrusive along the bedding planes of the sedimentary rocks. Large brecciated formations of decomposed rock occur in the slates, containing extensive copper deposits. *See* G.S.Q. Pub. 113 for details.

Geological Publications: Reports—Nos. 113 (1896), 143 (1899). *See under* Geol. Surv. Pub. List for title. *See also under* Govt. Ming. Jour., Report No. 77.

Discovery: Copper was first found here in March, 1895.

Warden: Stationed at Gladstone. Inspector of Mines: Stationed at Rockhampton.

Smelting Works: *See under* Smelting Works in Queensland.

—— —— Mine. *Min.Ref.* Azurite, *see* 184; Native Copper, 1990; Cuprite, 2424; Gold, 3659; Malachite, 6209; Silver, 7445; Tenorite, 7718.

Mount Carbine Wolfram Mines, 34 miles (*viâ* Mt. Molloy Tramway) N.N.W. of Biboohra (Cairns-Herberton line). *See maps*, Pls. 8, 9, 22. *Statistics: See under* Herberton. *Min.Ref.* Cassiterite, *see* 839; Molybdenite, 6830; Scheelite, 7341; Tungstite, 7878; Wolfram, 7940.

GEOLOGICAL NOTE: The prevailing country rocks on the field are slates, greywackes, and quartzites, with granite also occurring in the vicinity. The lodes are well defined, sometimes several feet thick, and contain wolfram associated with small quantities of tin and scheelite in a quartz gangue. The lodes trend N.W. and S.E., the country rocks N. and S., the intersection of one by the other tending to produce alternating rich and poor zones. (No G.S.Q. Pub. issued, but one in preparation by L.C.B.).

—— Cardwell Mine, 5 miles S. of Ord Rail. Stn. (Califorinia Cr.) (Mt. Garnet line). *Min.Ref.* Copper Pyrites, *see* 2172; Magnetite, 5992.

—— Cassiterite, Stanhills Tinfield. *Min Ref.* Cassiterite, *see* 761A.

—— Cavanagh, S.S.E. of Bowen. *Min.Ref.* Cuprite, *see* 2459; Hematite, 4742; Malachite, 6291.

Mount Chalmers (Gt. Fitzroy Copper Mine), Cawarral Goldfield. *See maps*, Pls. 2, 3, 34. (Gold discovered here in 1870; Copper about 1896.) *Min.Ref.* Azurite, *see* 251; Barytes, 279; Copper Pyrites, 2298; Gold, 4323; Iron Pyrites, 5401; Jasper, 5665; Malachite, 6364; Silver, 7530; Zinc Blende, 8202. *See also under* Govt. Ming. Jour., Report No. 101.

GEOLOGICAL NOTE: The rocks comprise shales, quartzites, and interbedded dolerite, with serpentine, sandstone, and limestone in the neighbourhood. The quartzites and shales are impregnated with gold-bearing iron pyrites and copper pyrites, the quartzites forming an immense lenticular or kidney-shaped mass. *See* G.S.Q. Pub. No. 216 for details and maps.

SMELTING WORKS: *See under* Smelting Works in Queensland.

HISTORICAL NOTE: Gold discovered here in 1860 (?); copper developments began in 1894 with the Osborne-Charley Syndicate; present company started in 1907. *See* G.S.Q. Pub. No. 216, p. 33.

STATISTICS: Included in Rockhampton.

—— Chelona (S. of), S.E.byS. of Mackay. *Min.Ref.* Gold, *see* 4117; Ironstone, 5584.

—— Clara Hills, Black Snake. *Min.Ref.* Asbolane, *see* 122; Manganese-dioxide, 6486; Nickel, 6909.

GEOLOGICAL NOTE: *See under* Mt. Coora.

—— —— Mine, Black Snake Goldfield. *Min.Ref.* Copper, *see* 1861.

—— Clarke (East of), Mt. Britten Goldfield. *Min.Ref.* Cerussite, *see* 1294; Galena, 3025; Minium, 6640.

—— Clifford, 9½ miles N.W. of Anakie. Proclaimed a Prov. Goldfield in September, 1897. *Includes* Mt. Clifford, Oswald, and Stewart and Spier's Mines. *Min.Ref.* Bornite, *see* 431; Chalcanthite, 1335; Copperas, 2337; Copper Pyrites, 2268A; Gold, 4167-4169; Hematite, 4767; Ironstone, 5597; Limestone, 663; Limonite, 5892, 5895; Magnetite, 6028.

GEOLOGICAL NOTE: Country rocks are talcose and mica schists and slates, in contact with diorite. Gold-bearing quartz reefs and ironstone formations occur in the schists, slates, and diorite. *See* G.S.Q. Pub. No. 127 for details and map.

Mount Cobalt Workings, 7 miles S.S.E. of Kilkivan. *Min.Ref.* Asbolane, *see* 123; Cobalt, 1836; Kyanite, 5716; Manganese-dioxide, 6487; Noumeite, 6911; Rhodochrosite, 7316; Rhodonite, 7322; Turquoise, 7913.

—— Colo Manganese deposits, Marodian Goldfield. *Min.Ref.* Manganese-dioxide, *see* 6491.

GEOLOGICAL NOTE: The rocks consist of jasperoid slates belonging to the Devonian System. Laminations of manganese-dioxide, cobalt-bearing, replace the slates in places. *See* G.S.Q. Pub. 179, p. 14, for details.

—— Cook, Magnetic Is. *Min.Ref.* Gold, *see* 3997, 4001; Iron Pyrites, 5231.

Mount Coora Cobalt Deposits, 8 miles S.S.E. of Kilkivan. Discovered about 1886. *Min.Ref.* Azurite, *see* 258; Chrysotile, 7397, 7398; Cobalt, 1837; Copper, 1862; Copper carbonate, 1964; Copper oxide, 2055; Copper Pyrites, 2328; Galena, 3070; Hematite, 4802; Manganese-dioxide, 6488; Nickel, 6910; Rhodochrosite, 7317; Rhodonite, 7323.

GEOLOGICAL NOTE: The country rock is brownish jasperoid quartzites and slates. The ore is manganese-cobalt wad, which, with associated rock, make up a thickness of 32 ft. The mine has recently been worked, but is now idle, the percentage of cobalt becoming less and less until now, it is considered, the quantity is too small for profitable working. *See* G.S.Q. Pub. No. 38 for details.

—— Cooroora, nr. Pomona Rail. Stn. *Min.Ref.* Gold (alluvial), *see* 3412A.

—— Coot-tha, 5 miles W. of Brisbane. *Min.Ref.* Copper Pyrites, *see* 2279; Garnet, 3138; Gold, 4217; Mispickel, 6778.

—— Coffin, Cania Goldfield. *Min.Ref.* Common Opal, *see* 6998.

—— Cornish Run Bore. *See under* Artesian Bores. No. 347.

—— Cotton (near). Thorn's Sel. *Min.Ref.* Coal, *see* 1774A.

—— Courtenay, Upper Cape Diggings, Cape R. Goldfield. *Min.Ref.* Gold, *see* 3561.

—— Crocisco Workings, Por. (13), East Stowe, Gladstone. *Min.Ref.* Manganese-dioxide, *see* 6462.

Mount Crosby, 12 miles W. of Brisbane. *Min.Ref.* Manganese-dioxide, *see* 6453; Psilomelane, 7095; Pyrolusite, 7128.

GEOLOGICAL NOTE: The rocks consist of schists of Gympie Formation (Permo-Carboniferous), in which occur deposits rich in manganese-dioxide. To the south there are sandstones, etc., of Ipswich Formation (Trias-Jura), resting on the Gympie beds. *See* G.S.Q. Pub. No. 147 for details and map.

—— Cross (Ryan's Sel.), 8 miles N. of Helidon Rail. Stn. *Min.Ref.* Calcite, *see* 664B.

Mount Cuthbert Group, Leichhardt R., Cloncurry. *See* Pl. 23. *Includes* Mt. Cuthbert M.L. (107), and numbers. *Min.Ref.* Chrysocolla, *see* 1514, 1515; Copper carbonate, 1877; Copper (native), 1987; Copper Pyrites, 2112-2114; Cuprite, 2413, 2414; Iron Pyrites, 4968; Ironstone. 5505, 5506; Limonite, 5818-5820; Magnesite, 5943; Malachite, 6178-6182; Redruthite, 7266; Tile Ore, 2535-2537.

—— Dalzell G.M. Coy's Mine, Cawarral Goldfield. *Min.Ref.* Gold, *see* 4325.

—— Davenport, Cape R. Goldfield. *Lat.*, 20° 30′ S.; *Long.*, 145° 32′ E. (Union and General Grant Reefs.) *Min.Ref.* Gold (alluvial), *see* 3268, 3269, (reef) 4045, 4046; Iron Pyrites, 5260; Mica, 6560.

—— Davidson (Pors. 27 and 81v), E.S.E. of Toowoomba. *Min.Ref.* Calcite, *see* 525A; Chabazite, 1316; Magnesite, 5953; Natrolite, 6902. *See also under* Govt. Ming. Jour., Report No. 120.

—— Deane (½-mile N.E. of), 6 miles S.S.E. of Charters Towers. *Min.Ref.* Gold, *see* 3978; Manganese-dioxide, 6431.

—— Devoncourt M.L. (550), Cloncurry. *Min.Ref.* Azurite, *see* 168; Copper Pyrites, 2090; Cuprite, 2407; Malachite, 6140.

—— Dee Vall Mine, Charleston, Etheridge Goldfield. *Min.Ref.* Cerussite, *see* 1190A; Copper Pyrites, 2146A; Galena, 2748A; Limonite, 5840A; Silver, 7449B.

—— —— Valley, Castleton, Etheridge Goldfield. *Min.Ref.* Anglesite, *see* 21C; Cerussite, 1190; Silver, 7449A.

—— Domville. (Golder's Sel.), 6 miles S.W. of Millmerran. *Min.Ref.* Coal, *see* 1626IA.

—— Dora, 4 miles W. of Kangaroo Hills Stn. *Min.Ref.* Antimony, *see* 76.

—— Doran Mine, Glastonbury Goldfield. *Min.Ref.* Gold, *see* 4397.

—— Douglas Copper Leases, Cloncurry. *Min.Ref.* Bornite, *see* 413; Chrysocolla, 1491; Copper carbonate, 1872; Cuprite, 2392; Ironstone, 5484; Redruthite, 7208.

—— Drain, 7 miles W. of Mt. Perry. *Min.Ref.* Copper carbonate, *see* 1880; Gold, 3582-3583; Hornblende, 4823; Iron Pyrites, 4984; Magnetite, 5973; Silver, 7430.

—— Drew, Brit. New Guniea. *Min.Ref.* Augite, *see* 144; Chabazite, 1314; Olivine, 6934.

—— Elliott, S.S.E. of Townsville. *Min.Ref.* Gold, *see* 4002; Iron Pyrites, 5232; Zinc Blende, 8135.

Mount Elliott (Selwyn) Mining Centre. 72 miles, by rail, S. of Cloncurry. *See* Pl. 23.

—— —— Group, Maggie's Cr., Cloncurry. *Includes* Mt. Elliott R.C. (3), M. Leases (331, 358, 494).

Mineral References: Atacamite, *see* 133; Calcite, 495; Chalcanthite, 1327; Chalcedony, 1343; Copper (native), 1998; Copper Pyrites, 2209; Cuprite, 2453, 2454; Gold, 3876; Iron Pyrites, 5135; Limonite, 5871; Malachite, 6273, 6274; Tenorite, 7726, 7727; Selenite, 4642; Tile Ore, 2560.

Smelting Works: *See under* Smelting Works in Queensland.

Statistics: Included in Cloncurry.

—— —— Mines Bores. *See under* Artesian Bores. No. 215.

—— Elvan, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4062-4064.

—— Emma, 3 miles N.E. of Palmerville. *Min.Ref.* Limestone, *see* 633; Marble, 582.

Mount Emu Plains Stn. Goldfield (?), Upper Flinders. *Min.Ref.* Cerussite, *see* 1188B; Galena, 2712A; Gold (alluvial) 3191A, (reef) 3561A, 3561C; Iron Pyrites, 4970A; Magnetite, 5970A; Massicot, 6521A, 6521B. *See also* Q.G.M.J., vol. 11, pp. 135 and 493 (1910).

—— Enniskillen Run Bores. *See under* Artesian Bores. Nos. 348, 349.

—— Esk Sub-artesian Bore. *See under* Artesian Bores. No. 260.

Mount Etna, nr. Rockhampton. *Min.Ref.* Asbestos, *see* 111; Guano, 4612; Ironstone, 5622; Limestone, 684, 685, (Crinoidal) 733, (Tufa) 751. *See* Geological Note *under* Olsen's Caves.

—— Eurie (valley W. of), 40 miles N.byW. of Cloncurry. *Min.Ref.* Asbolane, *see* 117; Cuprite, 2382; Garnet, 3150; Hematite, 4668; Ironstone, 5481; Labradorite, 5717; Limestone, 616; Malachite, 6075.

—— Fairbrother Reef, Mt. Jacob Mine, Bompa Goldfield. *Min.Ref.* Gold, *see* 4248.

—— Flat-top Reefs, Normanby Goldfield. *Min.Ref.* Gold, *see* 4131; Iron Pyrites, 5307.

—— Flori P.A., N.N.W. of Mt. Perry. *Min.Ref.* Gold, *see* 3660.

Mount Flora Gold and Mineral Field—

Situation: *See maps*, Pls. 10, 11. The field is 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. Centre about *Lat.* 21° 57′ S.; *Long.* 148° 38′ E.

Discovery: Mines opened about 1871, by Messrs. Orange, McFayden, Thompson, and "Red Pat."

Population: Less than 30.

Proclamation of Field: Gazetted on 19th September, 1907, as follows:—Commencing on the right bank of Bee Creek at the north-east corner of the resumed part of Oxford Downs, and bounded thence on the north by a line bearing west about six miles; on the west by the Annandale Lease bearing south-easterly about three miles and south-westerly about three miles and a-half to the north corner of the parish of Kerlong; on the south by the south boundary of the resumed part aforesaid easterly about eleven miles; thence by a line at right angles about three miles to Bee Creek; and thence by that creek upwards to the point of commencement.

Area: 33,920 acres = 53 sq. miles.

Mineral Statistics: Copper, *see under* Mackay, *in tables*, Pls. 39, 46, 46A.

Mineral References: **Copper** (Azurite) 235B-235N; (Chrysocolla) 1534A, 1534B, (Copper carbonate) 1950, (Copper Pyrites) 2269A-2269H, (Malachite) 6339A-6339R, (Redruthite) 7299A, 7299B (Tenorite) 7735A, (Tile Ore) 2568A, Mount Flora Gold and Mineral Field—*continued:*

2568B; Manganese-dioxide, 6448A; Iron (Hematite) 4769A-4769H, (Iron Pyrites) 5327A-5327H, (Ironstone) 5598A, (Limonite) 5895A-5895C, (Magnetite) 6029A, (Mispickel) 6771A, 6771B, (Pyrrhotite) 7161A; Other Minerals—Calcite, 511A; Chlorite, 1461A; Porcellanite, 5661A.

Geological Note: The country rocks of Mt. Flora are highly inclined slates and shales, with masses of granite in close proximity. The Copper Lodes occur as well-defined but small lenticular bodies in the slates, and are made up of pure Copper Pyrites. *See* G.S.Q. Pub. No. 181, for details.

Geological Publications: Reports—Nos. 181 (1903), and 228 (1910). *See under* Geol. Surv. Pub. List for title.

Warden: Stationed at Mackay; Inspector of Mines: Stationed at Rockhampton.

—— Fox, 30 miles S.W. of Ingham. *Min.Ref.* Antimony, *see* 75; Wolfram, 8031B.

Mount Fraser Tin Mines, 20 miles N.byW. of Biboohra Rail. line. *See* Pl. 22. *MinRef.* Cassiterite, *see* 960.

—— Gammie (Big Hill) Thane's Cr. Goldfield. *Min.Ref.* Gold, *see* 3857-3862, 3872; Ironstone, 5543, 5544; Manganese-dioxide, 6423; Psilomelane, 7088; Pyrolusite, 7122.

Mount Garnet Rail. Stn. and Mines—

Situation: *See maps,* Pls. 16, 17, 22. Return Cr., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Lat.*, 17° 46′ S.; *Long.*, 145° 9′ E.

Railway Base for Mt. Garnet Copper Mines and Coolgarra Tin and Wolfram Mines.

Population: 104 (estimated in 1910 by Warden. No estimate since.)

Mineral Statistics: Copper. *See under* Herberton in *Stat. tables,* Pls. 39, 46, 46A.

Mineral References: Gold, 3878; Silver, 7479; Lead (Cerussite) 1224, (Galena) 2863, (Mimetite) 6566, (Minium) 6598; **Copper** (Azurite) 212A, 213, (Bornite) 421, (Chalcanthite) 1330, (Copper carbonate) 1912, 1913, (Copper Pyrites) 2213, (Cuprite) 2456, (Malachite) 6284, 6285, (Tenorite) 7729, (Tetrahedrite) 7770, (Tile Ore) 2563; **Zinc Blende,** 8111; Iron (Hematite) 4732, 4733, (Iron Pyrites) 5143, (Limonite) 5874, (Magnetite) 6005, 6006, (Mispickel) 6741; Limestone, 649. Other Minerals—Garnet, 3121; Kaolin, 5689; Talc, 7679.

Geological Note: The country is made up of altered sedimentary rocks in contact with a decomposed elvan rock. The lodes contain kaolin, garnet rock, ironstone, and sulphides of iron, copper, and zinc. *See* G.S.Q. Pub. 134 for details.

Geological Publications: Report—No. 134 (1898), Map No. 220 (1909). *See* Geol. Surv. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Herberton.

Smelting Works: *See under* Smelting Works in Queensland.

—— Garnet (East of), 11 miles S. of Coolgarra. *Min.Ref.* Garnet, *see* 3121; Magnetite, 6006.

—— —— and Coolgarra (in br. of Return Cr., between), 6 miles N.byE. of Mt. Garnet. *Min.Ref.* Copper Pyrites, *see* 2215A; Iron Pyrites, 5143A; Rhodochrosite, 7315.

—— Geaoro, Brit. New Guinea. *Min.Ref.* Limestone, *see* 705.

—— Gilmore, nr. Mt. Morgan. *Min.Ref.* Gold, *see* 4368; Iron Pyrites, 5423.

—— Godkin, 34 miles W. of Cloncurry. *Min.Ref.* Native Copper, *see* 1974; Cuprite, 2383.

—— Gordon, about 3 miles W. of Wycarbah. *Min.Ref.* Iron Pyrites, *see* 5409; Kaolin, 5700; Mispickel, 6801.

Mount Gordon Group, Oxide Cr., Cloncurry. Now included in the Mt. Oxide Gold and Mineral Field. *Includes* Mt. Gordon M.L., 1 N., 1 S., and 2 S. Mining Leases. *Min.Ref.* Hematite, *see* 4678; Malachite, 6092.

—— Gordon M.L. (597), Cloncurry. *Min.Ref.* Hematite, *see* 4678; Malachite, 6092.

—— Gotthard Copper Mines, W.S.W. of Mackay. *Min.Ref.* Copper (ores), *see* 2043.

—— Gravatt, 4½ miles S.E. of Brisbane. *Min.Ref.* Coal, *see* 1769.

—— Greentop, 15 miles W.S.W. of Bowen. *Min.Ref.* Copper carbonate, *see* 1919.

—— Gregory, N.W. of Clermont. *Lat.*, 22° 3′ S.; *Long.*, 146° 40′ E. *Min.Ref.* Gypsum, *see* 4635.

—— Grim, nr. Gladstone. *Min.Ref.* Calcite, *see* 535; Copper carbonate, 1956; Garnet, 3141; Gold, 4263; Limestone (fossiliferous) 734, (oolitic) 743; Magnetite, 6039; Marble, 594; Rock Crystal, 7197.

—— Halley Sub-artesian Bores. *See under* Artesian Bores. No. 118.

—— Harbord Tin Mine, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 800; Tourmaline, 7843.

Mount Hartley Tin Mines, Annan R. Tinfield. *Include* Black Prince Lode and Caledonia Tin Claims. *Min.Ref.* Cassiterite, *see* 801-804; Cobalt, 1834A; Felspar, 2629; Iron Pyrites, 5023A; Mispickel, 6668A, 6669; Orthoclase, 7037; Tourmaline, 7838; Wolfram, 7930, 7931.

—— Hastings, 5 miles S.byW. of Degilbo. *Min.Ref.* Actinolite, *see* 4856; Bismuth ore, 353; Calcite, 605; Garnet 3096, (andradite) 3158; Gold, 3598; Iron Pyrites, 4998; Magnetite, 5978.

Mount Havilah, 2¾ miles S.S.W. of Degilbo. *Lat.*, 25° 32′ S.; *Long.*, 151° 57′ E. *Min.Ref.* Bismuth, *see* 319; Calcite, 479A; Epidote, 2593A; Garnet, 3166; Gold, 3602; Ironstone, 5513; Malachite, 6199.

Geological Note: The rocks in the vicinity of the mines consist of granite and slate, between which, as contact deposits, there are irregular masses of ironstone containing gold, copper, bismuth, and other minerals. *See* G.S.Q. Pubs. Nos. 185, 207.

—— Hawick (formerly Robina) Copper Mine, 12 miles W.S.W. of Degilbo. *Min.Ref.* Azurite, *see* 181; Calcite, 482; Copper Pyrites, 2140; Iron Pyrites, 5013; Malachite, 6204.

Mount Hay, 1½ mile S. of Wycarbah Rail. Stn. (Central line). *Min.Ref.* Agate, *see* 1382; Calcite, 540; Carnelian, 1388; Chalcedony, 1362; Jasper, 5647; Kaolin, 5701; Limonite, 5911; Lithophyses, 1396; Porcellanite, 5662; Rock Crystal, 7198.

Mount Hector (Dooboon) Copper Mine, 12 miles W.N.W. of Many Peaks Rail. Stn. (Boyne Valley line), Monal Goldfield. *See* Pl. 34. About *Lat.* 23° 33′ S.; *Long.* 150° 12′ E. *Min.Ref.* Azurite, *see* 244A; Bornite, 434; Copper Pyrites, 2287B; Cuprite, 2473A; Gold, 4263A; Iron Pyrites, 5364A; Ironstone, 5617B; Malachite, 6356A; Tenorite, 7739A; Wollastonite, 8046A. *See also under* Govt. Mining Jour., Report No. 19.

Discovery: Copper first found here on 17th Jan., 1903.

Geological Note: The rocks of Mt. Hector comprise granite, felsite, and limestones. The lodes contain iron pyrites, copper pyrites, gold, quartz, and wollastonite, the latter forming the gangue of the metallic minerals.

Smelting Works: *See under* Smelting Works in Queensland.

—— Hector Goldfield ? An old field situated in the Monal Goldfield, in which is included the Mt. Hector Copper Mines.

—— Helen Bore. *See under* Artesian Bores. No. 161.

—— Henry Copper Deposits, N. of Cloncurry. *See* Pl. 23.

—— High, Normanby Goldfield. *Min.Ref.* Gold, *see* 4138.

—— Hillalong, W.byS. of Mackay. *Min.Ref.* Sal-Ammoniac, *see* 7338.

—— Hishon Lease (210), and 1 E lease (224), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1249, 1250; Chrysocolla, 1530; Galena, 2969, 2970; Garnet, 3128; Lievrite, 5738; Malachite, 6305; Manganese-dioxide, 6440.

Mount Hogan Goldfield, S.E.byS. of Charleston. *Min.Ref.* Gold, *see* 3792, 3793; Telluride Ore, 7700. *Note.*—300 men worked here many years ago on quartz reef mining.

Mineral Statistics: *Included in* Etheridge.

Mount Hope Group, Wills R., Cloncurry. *Includes* Mt. Hope, Regina, Blue Jacket, Little Beauty, and Ardath M. Leases, and Monarch Senior M. Claim. *Min.Ref.* Atacamite, *see* 132; Calcite, 493, 494; Chrysocolla, 1523; Copper (native), 1997; Copper Pyrites, 2204-2207; Covelline, 2375, 2376; Cuprite, 2451; Iron Pyrites, 5131, 5132; Limonite, 5865-5868; Malachite, 6265-6269; Redruthite, 7289-7291; Tile Ore, 2556, 2557.

—— —— M.L. (366), Cloncurry. *Min.Ref.* Cuprite, *see* 2451A; Limonite, 5868; Malachite, 6269.

—— —— (Homeward Bound) Reef, Cania Goldfield. *Min.Ref.* Gold, *see* 4356; Ironstone, 5626.

—— Hope (Mt. Blowhard), S.S.W. of Rockhampton. *Min.Ref.* Gold, *see* 4183; Ironstone, 5599A.

—— Howitt Run Bores. *See under* Artesian Bores. No. 350.

—— Hurford, Palmer Goldfield. *Min.Ref.* Cassiterite, *see* 835.

—— Hutton Stn., 6 miles N. of Roma. *Min.Ref.* Coal, *see* 1699.

Mount Jacob, Bompa Goldfield. *Min.Ref.* Copper Pyrites, *see* 2284; Galena, 3039; Gold, 4246-4248, 4251; Iron Pyrites, 5359, 5360; Zinc Blende, 8183.

Geological Note: The country rock of Mt. Jacob is granite, which contains a quartz reef carrying gold, iron pyrites, galena, zinc blende, and calcite. *See* G.S.Q. Pub. 58, p. 7, for details.

—— —— Mine (Mt. Fairbrother, Garden, and Stanley Reefs), Bompa Goldfield. *Min.Ref.* Copper Pyrites, *see* 2284; Galena, 3039; Gold, 4248, 4251; Iron Pyrites, 5359, 5360; Zinc Blende, 8183.

—— Jardine, 12 miles N. of Einasleigh. *Min.Ref.* Copper Ore, *see* 2033B; Galena, 2814A; Iron Pyrites, 5086B.

—— Jibbinbar, head of Pike's Cr., Stanthorpe. *Min.Ref.* Mispickel, *see* 6717.

—— Keelbottom, N.W.byN. of Charters Towers. *Min.Ref.* Chrysocolla, *see* 1533; Copper (native), 2004; Malachite, 6316.

—— Kelly, 16½ miles S.E. of Gympie. *Min.Ref.* Gold, *see* 4550.

Mount Langan, 14½ miles W.N.W. of Kannangur Rail. Stn. *Min.Ref.* Anglesite, *see* 61; Bismuth, 321, 322; Calcite, 524; Cassiterite, 1171; Cerussite, 1295; Clay, 1577; Copper Pyrites, 2277; Galena, 3031-3033; Gold, 4195-4198; Iron Pyrites, 5336, 5337; Lead, 5727; Limonite, 5898; Massicot, 6546-6548; Mispickel, 6776; Zinc Blende, 8176, 8176A. *See also* Q.G.M.J., vol. 4, p. 188 (1903).

Mount Larcombe, 22 miles W.N.W. from Gladstone (Rockhampton line). *See* Pl. 34.

Railway Base for Targinnie Gold Mines.

Geological Note: The rocks around the flank of the mountain consist of Devonian slate, limestone, and quartzite, the latter rock also forming the three peaks at the summit of the mountain. Granite forms an outcrop close to the base on the eastern side. *See* G.S.Q. Pub. No. 194 for map.

—— —— Scrub, Raglan Goldfield. *Min.Ref.* Gold (alluvial), *see* 3387.

—— Leslie (between Blenheim Stn. and), S.byW. of Bowen. *Min.Ref.* Coal, *see* 1645.

Mount Leswell Tin Mines, Annan R. Tinfield. *Include* Leases Nos. 22, 28, 51, and and 52. *Min.Ref.* Cassiterite, *see* 778, 781, 783, 785, 786, 800, 805, 806, 809; Iron Pyrites, 5024, 5025; Mispickel, 6670, 6671; Tourmaline, 7839-7845.

Geological Note: The country rock is biotite granite, with quartzite and greywacke in the vicinity. The tin ore occurs in lodes of quartz and tourmaline. *See* G.S.Q. Pub. 66 for details.

Mount Leviathan, (Black Mt.), Cloncurry. *Min.Ref.* Hematite, *see* 4671; Limestone, 740; Magnetite, 5966.

Geological Note: The rocks about the mountain are slates, sandstones, and limestones, with intrusive masses of diorite. The greater part of the mount itself is composed of hematite iron ore, other portions being made up of magnetite. Near the summit there are quartz reefs and ironstone lodes. *See* G.S.Q. Pub. No. 136 for details.

—— Lewis Tin Mines, 9 miles N.byW. of Mt. Molloy Tramway line. *See* Pl. 22. *Min.Ref.* Cassiterite, *see* 961.

Mount Leyshon, 16 miles S. of Charters Towers. *Lat.*, 20° 17′ S.; *Long.*, 146° 17′ E. *See maps*, Pls. 16, 17, 28. *Min.Ref.* Chalcanthite, *see* 1331; Copper carbonate, 1914; Copper Pyrites, 2221; Felspar, 2641; Gold (alluvial) 3257, 3258, (reef) 3979, 3980; Hematite, 4734; Iron Pyrites, 5220, 5221: Limonite, 5875; Magnetite, 6009; Manganese-dioxide, 6432; Pyrolusite, 7123; Rock Crystal, 7191; Talc, 7680.

Mineral Statistics: *Included in* Charters Towers.

Geological Note: The rocks comprise porphyry, greywacke, shale, and volcanic agglomerate, the latter forming the apex of the mountain. Quartz reefs occur in the porphyry, greywacke, and shale, and there is an ironstone formation in the agglomerate, all carrying gold. *See* G.S.Q. Pub. 18 for details and maps.

—— —— (¾-mile E. of), S. of Charters Towers. *Min.Ref.* Cerussite, *see* 1226b; Galena, 2921b; Gold, 3976b; Limonite, 5875a; Silver, 7480c.

—— —— (1½ mile S.E. of, and 2½ miles E. of). *See under* One-mile Gully and Chinaman's Gully respectively.

—— Lidster Group, Corella R., Cloncurry. *Includes* Mt. Lidster, Hidden Treasure, Faded Rose, and Roseleaf M. Leases. *Min.Ref.* Copper Ore, *see* 2016a.

Mount Lion (between Warren and), 6 miles N.N.W. of Stanwell. *Min.Ref.* Limestone (oolitic), *see* 745. *Also under* Supplementary Report, No. 94, for further reference.

Geological Note: Mt. Lion consists of masses of felsite, closely in association with sandstones, limestone, shales, and conglomerates of Gympie Formation (Permo-Carboniferous). *See* G.S.Q. Pub. 149 for notes and map.

Mount Lindsay, 32 miles S.S.W. of Beaudesert. *Min.Ref.* Copper Pyrites, *see* No. 2280a.

Note: Coal Measures and interbedded basalts and trachytes occur around the base of the mountain, the peak itself being made up of trachyte.

—— Little, nr. Bowen. *Min.Ref.* Marble, *see* 585a.

—— Lloyd Group, Cameron R., Cloncurry. *Includes* Mt. Lloyd M. Leases Nos. 1 S, 2 S, 3 S, and 1 N. *Min.Ref.* Malachite, *see* 6075a.

Mount Lucy, 4 miles W. of Almaden Rail. Stn. (Chillagoe line). *Min.Ref.* Chert, *see* 1411; Epidote, 2594; Garnet, 3109; Hematite, 4715; Ironstone, 5529; Limestone, 638a; Magnetite, 5993; Wollastonite, 8042.

Geological Note: Mt. Lucy is a prominent hill of ironstone and garnet rock, and contains many thousands of tons of available iron ore. The base of the mount is granite, on which the garnet rock rests in irregular masses. Portions of the garnet outcrops have been weathered to magnetite and hematite. *See* G.S.Q. Pub. 196 for details.

—— Luxton (E. of) (Luxton's Mine), 3 miles N.E. of Ord Rail. Stn. (Chillagoe-Mt. Garnet line). *Min.Ref.* Galena, *see* 2788; Gold, 3766; Hornblende, 4829; Iron Pyrites, 5072.

—— —— (reef near (*ante*). *Min.Ref.* Anglesite, *see* 36; Galena, 2789; Iron Pyrites, 5073; Limonite, 5842.

—— Macedon Range, 75 miles S.W.byW. of Bowen. *Min.Ref.* Agate, *see* 1377; Chalcedony, 1346; Opal (common), 6977.

—— Mackenzie, W. side of Chine Bluff, N.W. of Rockhampton. *Min.Ref.* Copper, *see* 1854.

—— Madden, Oakey Cr., Palmer Goldfield. *Min.Ref.* Gold, *see* 3689; Ironstone, 5519; Mispickel, 6675.

—— Mahen Sub-artesian Bore. *See under* Artesian Bores. No. 98.

—— Margaret Run. *Includes* Laman's and Potts' Opal Mines, *which see.* *Min.Ref.* Opal (precious), *see* 6948c, 6948d.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 23.

—— Marley, N.E.byE. of Stanthorpe. *Min.Ref.* Bismuth (native), *see* 342; Bismuthinite, 371; Bismutite, 402; Cassiterite, 993, 994; Wolfram, 7987.

—— Mawe, 16 miles S. of Charters Towers. *Min.Ref.* Gold, *see* 3981; Iron Pyrites, 5222.

—— McCabe Group of Copper Mines, Martin's Cr., Cloncurry. *Includes* Mt. McCabe, McCabe's Hill, and Vulcan M. Leases. *Min.Ref.* Copper Ore, *see* 2019a.

Mount McConnell (nr.), Sellheim Mineral Field. *Min.Ref.* Gold (alluvial), *see* 3294.

—— McGann Range, Hodgkinson Goldfield. *Min.Ref.* Chalcedony, *see* 1341; Jasper, 5639.

—— McGregor, 2½ miles N.N.E. of Mirani Rail. Stn. (Mackay line). *Min.Ref.* Agate, *see* 1380; Calcite, 508; Chalcedony, 1350; Hyacinth, 8235; Ironsand, 5478; Laumonite, 5721; Limestone, 657; Limonite, 5886; Magnetite, 6024; Zircon, 8235.

Mount Mee, Woodford. *Min.Ref.* Copper Oxide, *see* 2050.

Geological Note: The mountain is made up of basalt, schist, and slates, the basalt forming the top, the two latter the base. Outcrops of the schists occur to the north and east, and trachytic lavas to the south-east.

—— Meerschaum, 14 miles E.S.E. of Beaudesert. *Min.Ref.* Tripolite, *see* 7031.

—— Melville, nr. Chowey Cr., W. of Maryborough. *Min.Ref.* Gold, *see* 3570; Ironstone, 5511; Manganese-dioxide, 6396.

—— Merlin Stn., S.byW. of Cloncurry. *Min.Ref.* Malachite, *see* 6275; Tile Ore, 2561.

—— Metallic Group of Copper Mines, Cloncurry. *Includes* Mt. Metallic R.C., Queenslander, and Dreadnought M. Leases. *Min.Ref.* Calcite, *see* 469; Chalcedony, 1338; Copper (native), 1988; Copper Pyrites, 2115, 2116; Cuprite, 2416; Iron Pyrites, 4969, 4970; Jasper, 5635, 5636; Limonite, 5821, 5822; Malachite, 6183, 6184; Redruthite, 7267, 7268; Tenorite, 7712; Tile Ore, 2538.

—— —— R.C. (310), Cloncurry. *Min.Ref.* Copper (native), *see* 1988; Copper Pyrites, 2115; Cuprite, 2416; Iron Pyrites, 4970; Limonite, 5822; Malachite, 6183; Redruthite, 7267; Tenorite, 7712; Tile Ore, 2538.

Mount Millar Mine, 6 miles (by rail) W.S.W. of Gladstone. *See* Pl. 34. Manganese was discovered here in 1895. *Min.Ref.* Manganese-dioxide, *see* 6465; Psilomelane, 7100; Pyrolusite, 7130.

Geological Note: The rocks comprise quartzites, slates, and jasperoids with associated deposits of manganese. The ore is made up principally of pyrolusite and psilomelane, and is very free from impurities, but very irregular in its occurrence. It has been formed, probably, by the replacement of slate. *See* G.S.Q. Pub. No. 194 for details.

Discovery: No official records exist concerning the discovery of manganese at Mt. Millar, but the mine was opened in 1895.

—— Millicent (663) and S. (664) M. Leases, Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2110, 2111; Cuprite, 2412A; Limonite, 5815, 5816; Malachite, 6176, 6177; Redruthite, 7264, 7265; Tile Ore, 2533, 2534.

—— Minerva, 12 miles N. of Springsure. *Min.Ref.* Common Opal, *see* 6981.

—— Minde M.F. (2658), Cloncurry. *Min.Ref.* Cuprite, *see* 2409; Copper Pyrites, 2099A; Limonite, 5795; Malachite, 6156.

—— Misery, 5 miles N.N.W. of Stanwell. *Min.Ref.* Travertine, *see* 750.

Geological Note: The mountain consists of an inlier of felsite, around which there are shales and limestones of Gympie Formation (Permo-Carboniferous). *See* G.S.Q. Pub. 149 for details and map.

Mount Molloy Copper Mine, 20 miles (by rail) N.N.W. of Biboohra Rail. Stn. (Cairns line). *See* Pl. 22. *Min.Ref.* Azurite, *see* 187; Copper Pyrites, 2143; Iron Pyrites, 5036; Malachite, 6215; Redruthite, 7278. *See also under* Govt. Ming. Jour., Reports 27, 58.

Mineral Statistics: *Included in* Herberton.

Smelting Works: *See under* Smelting Works in Queensland.

—— Mona, nr. Mt. Cotton. Thorn's Sel. *Min.Ref.* Coal, *see* 1774A.

Mount Morgan, 24 miles (by rail) S.S.W. of Rockhampton (Central Rail. line). Railway Base for Mt. Morgan Goldfield and Moonmera Copper Mines.

Technical College: For mining subjects taught here, *see under* "Technical Colleges."

General Information: Consult *Pugh's Almanac; Queensland Post Office Directory; Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Local Newspapers: *Mt. Morgan Argus*; *Mt. Morgan Chronicle and Mining Gazette*

Mount Morgan Goldfield (*includes* Crocodile Cr.)—

SITUATION: *See maps*, Pls. 2, 3, 35. The goldfield extends from 6 miles S of, to about 43 miles S.S.W. of Rockhampton. *Cos.* Livingstone and Raglan; *Dist.* Port Curtis. Centre about *Lat.* 23° 35′ S.; *Long.* 150° 25′ E.

DISCOVERIES: Gold was discovered in Crocodile Creek in 1865, but it was only in June, 1866, that payable deposits were found. The Hector Reef, on this creek, was opened in 1866, being the first reef worked in Queensland.

POPULATION: 12,195 (Census 1911).

PROCLAMATION OF FIELD: First (and only one) gazetted, 18th September, 1900, as follows:—Commencing at the north-east corner of portion 277, parish of Bouldercombe, and bounded thence by the road dividing portions 727, 730, 702 from portions 772, 918, and 936 north-west; thence by the road dividing portions 306, 65, and 50 from portions 756, 790, and 711; thence by the road dividing portions 497 north-east to the north boundary of same, by the north boundaries of portions 497, 54, 707, and 705 easterly, by the north-east boundaries of portions 704, 1040, 768, 931, 717, 775, 765, 1571, and 1856 south-east, by the east and south boundaries of portion 1575 south and west, by the west boundary of same north to Midge Creek, by that creek upwards southerly to the south-east corner of portion 779, by the south and west boundaries of that portion west and north, by the south boundaries of portions 767, 923, and 1009 west to portion 772, by part of the east, the south boundary of that portion south and west, and a line south-west to the point of commencement,—exclusive of all alienated lands.

AREA: 237,600 acres = 371¼ sq. miles.

LEASES: Goldmining leases and application in force, 12; area, 301 acres. Mineral leases and applications, 6; area, 262 acres. Miners' homesteads, 2,147; area, 14,172 acres (1910).

PRINCIPAL MINING CENTRES: Mt. Morgan, Moonmera, Mt. Usher, Mt. Victoria, Clanricarde, Struck Oil, Dee River, Gavial Creek, etc., *which see.*

MINERAL STATISTICS: Gold, *see tables and diagram*, Pls. 36, 46, 46A, 47. Copper, *see tables*, Pls. 39, 45, 46, 46A.

STATISTICAL NOTE: *See under* Rockhampton.

MINERAL REFERENCES: Gold (nugget) 3446, 3448, (reef) 4337, 4338, 4359-4384, (Calaverite) 446; Silver, 7532; Copper (Copper carbonate) 1962, (Copper Pyrites) 2308-2317; Bismuth (Tetradymite), 7748, 7749; Antimony (Stibnite), 7651; Manganese (Pyrolusite), 7131; Zinc Blende, 8206, 8207; Iron (Göthite) 4569, (Hematite) 4800A, (Iron Pyrites) 5406, 5416-5437, (Ironstone) 5621, 5630, 5631, (Limonite) 5920-5922, (Magnetite) 6055-6060, (Mispickel) 6805; Fire Clay, 2651. Other Minerals—Apophyllite, 85; Calcite, 548,549; Clay, 1583; Floatstone, 7011; Kaolin, 5704, 5705; (Satin Spar) 4637; Schorl, 7876; Selenite, 4647; Siliceous Sinter, 7200; Tourmaline, 7872; Websterite, 7924.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 17 (1884), 57 (1888), 83 (1892), 132 (1898), 161 (1901). *See under* Geol. Sur. Pub. List for title; *see also under* Govt. Ming. Jour., Report No. 11.

GEOLOGICAL NOTE: The rocks about the mine are altered sedimentary rocks, principally quartzites, which in the neighbourhood of the mount are in contact with granite. Between the granite and the quartzites there are limestones and garnet rock, while dolerite dykes traverse the quartzites in all directions. The quartzites throughout are pyrites-bearing, but it is only in a zone near the granite that they are copper-and-gold-bearing. Some of the peaks near Mt. Morgan are capped with sandstone belonging, probably, to the Stanwell (Trias-Jura) Coal Measures. *See* G.S.Q. Pub. No. 47, 83, 131, 161, for details.

WARDEN: Stationed at Mt. Morgan. INSPECTOR OF MINES: Stationed at Rockhampton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.M.G. Jour.; annually in A.R.D.M.

CRUSHING MILLS: Five batteries (35 stamps). Charges, 12s. 6d. to 15s. per ton.

SMELTING WORKS: *See under* Smelting Works in Queensland.

Mount Morgan Mine, Mt. Morgan (Crocodile Cr.) Goldfield. The rich deposits of gold were discovered in 1882, but gold was found in the vicinity in 1865.

MINERAL REFERENCES: Calaverite, *see* 446; Clay, 1583; Copper Pyrites, 2313-2313A; Floatstone, 7011; Gold, 4370; Göthite, 4569; Hematite, 4800A; Iron Pyrites, 5426-5428; Limonite, 5921; Magnetite, 6058; Mispickel, 6805; Pyrolusite, 7131; Satin Spar, 4637; Selenite, 4647; Silver, 7532; Siliceous Sinter, 7200; Tetradymite, 7749; Websterite, 7924. *See also under* Govt. Ming. Jour., Report No. 100. *See* geological and other notes *under* Mount Morgan Goldfield.

—— Morgan Bores, near Stanwell. *See under* Coal Bores.

—— —— N. Mine, Mt. Morgan (Crocodile Cr.) Goldfield. *Min.Ref.* Copper carbonate, *see* 1962; Gold, 4371; Iron Pyrites, 5429; Ironstone, 5631.

—— —— Reef, Tabletop, Croydon Goldfield. *Min.Ref.* Gold, *see* 3546; Massicot, 6521; Pyromorphite, 7138.

—— Morris Bores. *See under* Artesian Bores. No. 99, 351.

—— Morrisey Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4298.

—— Moss (167), South (168), and Extended (169) Leases, Kangaroo Hills Mineral Field. *Min.Ref.* Atacamite, *see* 134; Calcite, 505; Cerussite, 1251-1253; Chrysocolla, 1531, 1532; Copper carbonate, 1933; Copper (native), 2002; Copper Pyrites, 2246; Cuprite, 2462; Fluorspar, 2684; Galena, 2971; Garnet, 3129; Gypsum, 4624; Hematite, 4750; Ironstone, 5562, 5563; Linarite, 5939; Manganese-dioxide, 6441; Mispickel, 6753; Minium, 6600; Pyrolusite, 7124; Smithsonite, 7571; Zinc Blende, 8160.

—— Mudloo Copper Mine. *See under* Mudloo Copper Mines . *See also* A.R.D.M., pp. 155, 156 (1904).

—— Muir, Kilkivan Goldfield. *Min.Ref.* Asbestos, *see* 115.

Mount Mulligan Coalfield, 10 miles W.N.W. of Thornborough. *See* Pl. 22. *Min.Ref.* Coal, *see* 1612. *See also under* Govt. Ming. Jour., Report No. 92, and G.S.Q. Pub. 222, p. 35 (1910), and 237 (1912).

GEOLOGICAL NOTE: The base of the mountain is made up of vertical beds of shales and greywacke, over which there are horizontally bedded sandstones, conglomerates, shales, and coal seams of Desert Sandstone (?) Formation (Upper Cretaceous). A railway is now being constructed to connect the mines with Chillagoe.

—— Nansen's Mine. *See* Nansen's Mine (?).

—— Nelson, nr. Mt. Moran. *Min.Ref.* Actinolite, *see* 4869; Magnetite, 6059.

—— Norma, 17 miles S.E. of Cloncurry. *Min.Ref.* Asbolane, *see* 118; Cuprite, 2389; Garnet, 3151; Malachite, 6086; Manganese-dioxide, 6387; Wad, 7108.

—— Ogston Tin Claim, Dry R., *Min.Ref.* Cassiterite, *see* 1063A.

—— Ophir and Mine, Chowey Cr. *Min.Ref.* Copper Pyrites, *see* 2123; Gold, 3571-3573; Iron Pyrites, 4972, 4973; Ironstone, 5512; Mispickel, 6647; Molybdenite, 6815.

GEOLOGICAL NOTE: The rocks comprise acidic volcanic tuff and breccia, with intrusive porphyry, in which there is a wide formation carrying gold-bearing veinlets of quartz. *See* G.S.Q. Pub. No. 25 for details.

Mount Orange Copper Mines, 75 miles S.W. of Mackay. *Lat.*, 22° 0′ S.; *Long.*, 148° 35′ E. Discovered about 1871. *Min.Ref.* Azurite, *see* 239; Copper Pyrites, 2272; Hematite, 4771; Malachite, 6339s; Tenorite, 7377; Tetrahedrite, 7777.

GEOLOGICAL NOTE: The rocks of Mt. Orange are highly inclined slates and schists of undetermined age. They form an outlier older than the Bowen River Formations (Permo-Carboniferous) of the adjacent country. *See* G.S.Q. Pub. 200 for details.

SMELTING WORKS: *See under* Smelting Works in Queensland.

—— Ormonde, 6 miles E. of Irvinebank. *Min.Ref.* Cassiterite, *see* 1135

Mount Oxide Gold and Mineral Field—

Situation: *See maps,* Pls. About 109 miles N.W. of Cloncurry. In the Counties of Kamileroi, Tewinga, and Undilla; District of Burke. *Includes* Mt. Oxide and Mt. Gordon Groups of Copper Mines.

Proclamation of Field: First and only one gazetted, Nov. 14th, 1912. Now superseded by Proclamation of 9th January, 1913, by which the area is included in the Cloncurry Gold and Mineral Field, *which see.*

Area: About 440 square miles.

Mineral References: Atacamite, see 127; Copper, 1839; Hematite, 4678, 4695; Ironstone, 5488; Malachite, 6092, 6185; Tile Ore, 2539.

—— —— M.L. (282), Mt. Oxide Group, Cloncurry. *Min.Ref.* Atacamite, see 127; Malachite, 6185; Tile Ore, 2539.

Mount Perry (Bundaberg and Mt. Perry line), 67 miles (by rail) S.W.byW. of Bundaberg. *Lat.,* 25° 10′ S.; *Long.,* 151° 38′ E. *See maps,* Pls. 4, 5.

Railway Base for Reid's Creek, Gaeta, and Boolboonda Gold and Mineral Fields; Mt. Perry, Canterbury, Normanby, Mungai, Potosi, Wolca, Cambria, and New Moonta Copper Mines; Allendale Silver Mine, Eidsvold Goldfield, and the Rawbelle Copper Mine.

Discoveries: Copper found in 1869 by H. Dingle on Yenda Station. Mercury (as Cinnabar) found in 1872 on cap of Mt. Perry Copper Lode by Captain Osborne.

Geological Note: *See under* Tenningering Gold and Mineral Field.

Geological Publications: Report—No. 21 (1885). *See under* Geol. Surv. Pub. List for title; *see also under* Govt. Ming Jour., Report—No. 24.

Mineral Statistics:

Copper,	*see stat. tables,*	Pls. 39, 46-46A.
Silver,	,, ,, ,,	Pls. 37, 46-46A.
Limestone,	,, ,, ,,	Pls. 41, 46-46A.
Ironstone,	,, ,, ,,	Pls. 41. 46-46A.

Smelting Works: *See under* Smelting Works in Queensland.

—— Perry Copper Mine (*ante*). *Min.Ref.* Atacamite, see 128; Azurite, 174; Bornite, 416; Calcite, 472; Chalcotrichite, 2489; Copper Ore, 2021; Copper Pyrites, 2126, 2127; Cuprite, 2418, 2419; Gold, 3585; Iron Pyrites, 4987; Magnetite, 5974; Malachite, 6192; Tenorite, 7713; Tetrahedrite, 7759; Tile Ore, 2544; Zinc Blende, 8062. *See also under* Govt. Ming. Jour., Report No. 24.

—— —— Gold and Mineral Field. *See under* Tenningering Gold and Mineral Field.

—— —— (3 miles S. of), on Eidsvold Road. *Min.Ref.* Gold, see 3586; Mispickel, 6654; Silver, 7431; Topaz, 7785.

—— —— (between Eidsvold and). Coal (?) 1601B.

—— —— and New Cannindah (on road between), about 20 miles N.W. of Mt. Perry. *Min.Ref.* Limestone, see 631.

—— Petrie Bores, Tingalpa. *See* Heussler's and Mt. Petrie Bores *under* Coal Bores.

—— Phillipson, North Pine, N. of Brisbane. *Min.Ref.* Chalcedony, see 1355.

—— Philp, Cloncurry. *Min.Ref.* Ironstone, see 5491B.

Mount Pisa, at Cloncurry. *Min.Ref.* Hematite, see 4672.

—— Pleasant Bore. *See under* Artesian Bores. No. 406

—— —— Reef, Gympie Goldfield. *Min.Ref.* Gold, see 4519.

—— —— and Ruby Crs. (between), Withersford. *Min.Ref.* Azurite, see 234A; Bornite, 430B; Ironstone, 5598; Limonite, 5894; Magnetite, 6026A.

—— Pom Pom, 5 miles N.W. of Mt. Molloy. *Min Ref.* Wolfram, see 7941.

—— Pring (nr.), 10 miles W. of Bowen. *Min.Ref.* Molybdenite, see 6858B.

—— Pullen, Brit. New Guinea. *Min.Ref.* Limestone, see 706.

Mount Rainbow Goldfield—

Situation: *See maps,* Pls. 2, 3, 34. The field is about 42 miles S.W. of Gladstone. *Co.* Raglan; *Dist.* Port Curtis. Centre about *Lat.* 24° 15′ S.; *Long.* 150° 30′ E.

Proclamation of Field: First gazetted, 2nd July, 1896; last alteration 6th November, 1908, as follows:—Commencing on Mount Buckland, on the Calliope Range, and bounded thence by that range easterly and northerly to Rocky Point Mount; thence by that range south-easterly to the south-west corner of portion 1v, Maxwelton, by the south boundary of that portion east about 215 chains; thence by a line bearing south about 2½ miles; thence by a line bearing west 5 miles; thence by a line bearing north 210 chains; thence westerly 183 chains and north to the point of commencement.

Area: 8,960 acres = 14 sq. miles.

Mineral Statistics: Gold, *included in* "Other Goldfields" in *stat. tables* and *diagrams,* Pls. 36, 46, 46A, 47.

Mineral References: Gold (alluvial), *see* 3400, 3401; Jasper, 5667.

Geological Note: The rocks in and around Mt. Rainbow consist of quartzite, altered conglomerate, schist, granite, and basalt. The altered sedimentary rocks belong to the Gympie Formation, and are intruded by granite. The basalt covers both granite and sedimentary rocks, and also gold-bearing alluvial deposits which have formed in old water-worn channels in the granite. Small reefs occur in the granite and adjoining rocks, some of which have been proved to be payable.

Geological Publications: Report—No. 126 (1897). *See* Geol. Surv. Pub. List for Title.

Warden: Stationed at Gladstone. Inspector of Mines: Stationed at Rockhampton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— Razorback, Upper Burdekin. *Min.Ref.* Augite, *see* 142; Magnetite, 6013; Olivine, 6927.

Mount Redcap, 3 miles N.E. of Mungana Rail. Stn. *Min.Ref.* Azurite, *see* 201; Cerussite, 1210, 1211; Copper Phosphate, 2059; Copper Pyrites, 2175; Galena, 2807-2809; Garnet, 3112; Iron Pyrites, 5077; Ironstone, 5531; Malachite, 6240-6243; Manganese-dioxide, 6411; Minium, 6590, 6591; Pyrolusite, 7119; Pyrrhotite, 7157; Tetrahedrite, 7767; Wollastonite, 8043; Zinc Blende, 8088.

—— Regner Lease (242), Kangaroo Hills Mineral Field. *Min.Ref.* Bornite, *see* 424; Magnetite, 6020.

Mount Remarkable Mining Centre, Cape R. Goldfield. *Lat.*, 20° 32′ S.; *Long.*, 145° 17′ E. *Includes* Morning Star, Governor Blackall, Victoria, Bell Gay, Lone Star, Martin's, Commissioner's Alblion, Mariner's, and Barcoo Reefs, and Escort or Stone C., Golden, Green's, Long, Moran's, Nuggety, Paddy's, Quartzite, Sharper's, and Specimen Gullies, *which see.* *Min.Ref.* Cerussite, *see* 1230; Copper Pyrites, 2236; Galena, 2946-2948; Gold (alluvial) 3270, (reef) 4047-4052; Iron Pyrites, 5262, 5263; Ironstone, 5551; Mispickel, 6749; Silver, 7488.

Geological Note: The country rocks consist of quartzites, fine mica-schists, and granitoid schists. Gold-bearing quartz reefs occur in the neighbourhood, but most of the gold obtained has been from alluvial deposits. *See* G.S.Q. Pub. No. 73 for details.

—— —— Group, Cloncurry. *Includes* Ruth and The Bully M. Lease. *Min.Ref.* Limonite, *see* 5745; Malachite, 6076; Redruthite, 7205.

—— Richardson, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3271.

—— Robert Range, 5 miles S.S.E. of Thornborough. *Min.Ref.* Chalcedony, *see* 1342; Jasper, 5640.

Mount Romeo Alluvial Tin Claims, Annan Tinfield. *Lat.* 15° 22′ S.; *Long.*, 145° 19′ E. *Include* Finnegan's, Grass-tree, Jackeroo, Mahoney's, Shipton's, Spargo's, Wilson and Muir's, and Yates' Claims. *Min.Ref.* Cassiterite, *see* 807, 808; Tourmaline, 7846; Wolfram, 7932.

Geological Note: The country rock is granite. The alluvial tin deposits probably have been derived from the disintegration of the granite, but tin lodes have not been discovered up to the present time. *See* G.S.Q. Pub. No. 35 for notes.

Geological Publications: Reports Nos. 35, 66, 210. *See* Geol. Surv. Pub. List for title.

—— Rose, Glenbar, W. of Tiaro. *Min.Ref.* Gold, *see* 4416A; Stibnite, 7654.

Mount Rose P.C., United 1, 2, and 3 West, and 1 East Mines, Eidsvold Goldfield. *Min.Ref.* Galena, *see* 2735; Gold, 3647-3650; Iron Pyrites, 5017-5019; Ironstone, 5516; Kaolin, 5674; Mispickel, 6664; Zinc Blende, 8073, 8074.

—— —— and Stockman Junction Lease, Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3651.

—— —— Reef, Eidsvold Goldfield. *Min.Ref.* Galena, *see* 2735; Gold, 3637, 3647-3652; Iron Pyrites, 5017-5019; Ironstone, 5516; Kaolin, 5674; Mispickel, 6664; Zinc Blende, 8073, 8074.

—— —— ——, Cania Goldfield. *Min.Ref.* Calcite, *see* 547; Copper Pyrites, 2304; Gold, 4357; Iron Pyrites, 5413, 5414; Molybdenite, 6865.

—— Roundback, 35 miles S. of Bowen. *Min.Ref.* Marble, *see* 588.

—— Ruby, 8 miles S. of Cardwell. *Min.Ref.* Cassiterite, *see* 1149.

—— ——, 20 miles W. of Tiaro. *Min.Ref.* Copper carbonate, *see* 1969; Gold (alluvial), 3410, (reef) 4417; Gypsum, 4632; Iron Pyrites, 5450; Limonite, 5926; Mispickel, 6810; Zinc Blende, 8211.

—— Russell Estate Sub-artesian Bore. *See under* Artesian Bores. No. 352.

Mount Samford, Enoggera Ranges, W. of Brisbane. *Min.Ref.* Bismuthinite, *see* 375; Bismutite, 410; Chiastolite, 1417; Malachite, 6349; Minium, 6642.

GEOLOGICAL NOTE: Granite prevails at Mt. Samford in contact with metamorphosed sedimentary strata, and the reefs there contain traces of gold, copper, lead, and bismuth. *See* G.S.Q. Pub. 159 for details.

—— Scott, nr. Moonmera Rail. Stn. *Min.Ref.* Gold (alluvial), *see* 3405.

Mount Shamrock Goldfield—

SITUATION: *See maps,* Pls. 4, 5. The field is about 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. Centre about *Lat.* 25° 25′ S.; *Long.* 152° E.

DISCOVERY: Gold was found at Mt. Shamrock about the month of June, 1886.

AREA: 4,500 acres = $7\frac{1}{32}$ sq. miles.

PROCLAMATION OF FIELD: First gazetted, 22nd February, 1905; last alteration, 18th May, 1905, as follows:—Commencing at the south corner of the Paradise Goldfield, proclaimed in *Government Gazette,* 1890, vol. 3, p. 1087; and bounded thence on the north-west by that goldfield bearing north-east for about 3 miles and 5 chains; on the east by a line passing along the west boundaries of designed portions 50, 51, a timber reserve, and 60, southerly about 3 miles and 34 chains to Chowey Creek; thence by a line passing along the west boundary of designed portion 227 and a camping reserve south to the north side of the Degilbo-Gayndah road; by the north-west side of that road south-west to the east corner of portion 186v, by the north-east boundaries of portions 186v, 1v, and 2v, north-west about 2 miles to the right bank of Chowey Creek; thence by Chowey Creek downwards to the south corner of a reserve for mining situated on the east corner of portion 37v, by the south-west and north-west boundaries of that reserve north-west 16 chains and north-east 18 chains to the north-east boundary of portion 37v; and thence by that boundary bearing north-west about 62 chains to the point of commencement.

PRINCIPAL MINING CENTRES: Mt. Shamrock Gold Mine, Allendale Silver Mines, *which see.*

MINERAL STATISTICS: Gold, *included in* Other Goldfields, in *stat. tables,* Pls. 36, 46, 46A.

MINERAL REFERENCES: Gold, *see* 3603-3606, (Telluride) 7698; Copper (Copper Pyrites) 2136, (Malachite) 6202; Bismuth (Bismite) 312, (native) 328, (Bismuthinite) 362, 363; (Joseïte) 5668; Molybdenite, 6821; Zinc Blende, 8069; Iron (Hematite) 4699, (Iron Pyrites) 5002, (Limonite) 5830, (Mispickel) 6660. Other Minerals—Ankerite, 64; Calcite, 480; Dolomite, 2586.

GEOLOGICAL NOTE: The rocks of Mt. Shamrock comprise mudstones and quartzites, a fine-grained diorite, an intrusive acid volcanic dyke, and a coarse breccia. The diorite has intruded the mudstones, etc., the dyke has disturbed the mudstones and the diorite, while the breccia is an agglomerate of all three. All of these rocks contain fine veins of rich

Mount Shamrock Goldfield—*continued:*
bismuth-gold-bearing ore without quartz. The veins in the acidic dyke are richest, those in the diorite next in value, and those in the mudstone and breccia poorest.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 25 (1886), 60 (1890), 168 (1901), *See under* Geol. Surv. Pub. List for title. *See also under* Govt. Ming. Jour., Report No. 119.

WARDEN: Stationed at Maryborough. INSPECTOR OF MINES: Stationed at Rockhampton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— —— M.C. (184), Cloncurry. *Min.Ref.* Calcite, *see* 459B; Copper Pyrites, 2090B; Iron Pyrites, 4926B; Tourmaline, 7814A.

—— Simpson, Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 761B.

—— Smyth, S.E. of Gympie. *Min.Ref.* Gold, *see* 4551.

—— Spec, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1157.

Mount Spencer, Gogango Ranges, 4 miles S. of Gogango Rail. Stn. (Central line).

GEOLOGICAL NOTE: The rocks are slates and intrusive dykes, the slates having a general north and south trend. Large reefs can be traced along the surface for miles. *See* G.S.Q. Pub. No. 155 for notes.

Mount Spencer Gold and Mineral Field—

SITUATION: *See maps,* Pls. 14, 15. The Field is situated about 6 miles S.W. of Eton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* Kennedy South. Centre—about *Lat.* 21° 20′ S., *Long.* 149° 50′ E.

PROCLAMATION OF FIELD: First gazetted, 10th June, 1890; last alteration, 7th March, 1902, as follows:—Commencing on the right bank of the Pioneer River at the north-west corner of Bong Bong Run, (Mount Spencer Consolidated), and bounded thence on the north by a line bearing east to the north-west corner of portion 566; thence by that portion bearing south and east to the north-west corner of portion 1002; thence by that portion bearing south-east and north to portion 566; thence by that portion bearing east to its south-east corner; thence by a line bearing south about five miles to Black Waterhole Creek; by that creek upwards to the west boundary of a reserve for timber proclaimed in *Government Gazette,* 1886, vol. 2, p. 1274, by the west and north boundaries of that reserve north and east to Black Waterhole Creek, by that creek northerly to portion 1602, by part of the south boundary of that portion, by the west boundary and a line in continuation northerly about a mile to the range, by that range north-west to the south-east corner of portion 1562, by the south boundary of that portion and a line crossing Cut Creek to the south-east corner of portion 990, by the south, the west, and part of the north boundaries of that portion; thence by the telegraph line northerly to a point west from the south-west corner of portion 1017; thence by a line west about six miles to the Pioneer River; and thence by that river downwards northerly to the point of commencement.

AREA: 16,640 acres (26 sq. miles).

PRINCIPAL MINING CENTRES: Pine Vale Creek Copper Mines; Mine Creek Gold Workings, *which see.*

MINERAL STATISTICS: Silver, Copper, and Lead. *See under* Mackay *in stat. tables,* Pls. 37, 38, 39, 46, 46A. (No gold returns.)

MINERAL REFERENCES: Gold (alluvial) 3275, 3365, (reef) 4118, 4141; Silver, 7498, 7499; Lead (Galena), 3007-3010; Copper (Azurite) 230A, 231, (Bornite) 429A, (Copper) 1848, (Copper Pyrites) 2255, 2255A, 2271, (Malachite) 6319, 6326, 6327, (Tenorite) 7734, (Tetrahedrite) 7775; Zinc Blende, 8167A; Bismuth (Bismutite), 409; Iron (Hematite) 4758, 4759A, (Ironstone) 5588, (Magnetite) 6023, (Mispickel) 6759; Coal, 1702.

GEOLOGICAL NOTE: The mount consists of a mass of granite surrounded by the sedimentary rocks of the Lower Bowen Formation (Permo-Carboniferous). *See* G.S.Q. Pub. No. 92 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 53, 164, 181, and 229. *See* Geol. Surv. Pub. List for titles.

WARDEN: Stationed at Mackay. INSPECTOR OF MINES: Stationed at Rockhampton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— —— Run, 10 miles S. of Eton Rail. Stn. *Min.Ref.* Coal, *see* 1643; Copper Pyrites, 2271A; Gold, 4188A; Iron Pyrites, 5329A; Silver, 7505A.

Mount Spurgeon Tin Mines, 22 miles N.W. of Port Douglas. *Lat.*, 16° 35′ S.; *Long.*, 145° 10′ E. Tin discovered here in 1886. *Statistics included in* Port Douglas returns. *Min.Ref.* Cassiterite, *see* 962.

—— St. Paul, Ravenswood Goldfield. *Min.Ref.* Ironstone, *see* 5556.

—— Stanley, 17 miles N. of Benarkin Rail. Stn. *Min.Ref.* Ironstone, *see* 5607; Kaolin, 5696.

—— Start, 23½ miles S.S.W. of Cloncurry. Smelting Works established here treat ore for various groups of copper mines.

—— Station Gully, trib. of Quart Pot Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 995, 1007; Wolfram, 7991.

Mount Steadman, 4½ miles W. of Biggenden. Proclaimed a Prov. Goldfield in 1893. *Min.Ref.* Native Bismuth, *see* 327; Bismuthinite, 364; Gold, 3606A, 3607; Molybdenite, 6822. 6823; Molybdite, 6869; Telluride of Gold, 7699.

—— Sturgeon Run, 44 miles N.E. of Hughenden. *Min.Ref.* Coal, *see* 1598A.

—— Sturt, 2 miles N.N.W. of Yangan Rail. Stn. (Killarney line). *Min.Ref.* Gold, *see* 3874; Limonite, 5855; Turgite, 7897.

Mount Success. *See maps*, Pls. 16, 17. 15 miles W.N.W. of Ravenswood Junction. Gold discovered and rush took place in 1896.

Mineral References: Gold (alluvial), *see* 3261, (reef) 4003-4006; Iron Pyrites, 5233, 5234; Limonite, 5877; Silver, 7482, 7483; Zinc Blende, 8136, 8137.

Geological Note: The country rocks are granite and felsite, along the line of contact of which there are small quartz reefs containing zinc blende, iron pyrites, calcite, and gold. *See* G.S.Q. Pub. 133 for details

—— —— Reef, Mt. Success. *Min.Ref.* Gold, *see* 4006; Iron Pyrites, 5234; Zinc Blende, 8137.

—— Surprise, S.W. of Almaden. *Min.Ref.* Kaolin, *see* 5680; Penninite, 7061; Rutile, 7330.

—— Sylvan, 12 miles S. of Gatton. *Min.Ref.* Chalcedony, *see* 1353; Opal (resin), 6990.

—— Sylvia M.L. (422), Cloncurry. *Min.Ref.* Hematite, *see* 4685; Limonite, 5769.

—— Tamborine, 10 miles S.S.E. of Logan Village. *Min.Ref.* Olivine, *see* 6930; Opal (resin), 6995; Pyrrhotite, 7161B.

Mount Taylor (Bennett's Sel., 411), 1 mile N. of Kingston Rail. Stn. *Min.Ref.* Cassiterite, *see* 1173; Gold, 4218.

Geological Note: The rocks comprise clay slates and schists probably belonging to the Devonian System, in which there are large low-grade gold-bearing quartz reefs and ironstone formations.

—— Terrible Lode, Black Snake Goldfield. *Min.Ref.* Copper carbonate, *see* 1965; Galena, 3071; Gold, 4391; Native Copper, 2014; Silver, 7537.

—— Thabor, 3 miles N.E. of Warwick. *Min.Ref.* Coal, *see* 1633B, 1633C. *See also* Q.G.M.J., vol. 11, p. 605 (1910).

—— Thekla Copper Mine, Kangaroo Hills Mineral Field. *Min.Ref.* Bornite, *see* 425; Copper carbonate, 1934; Copper Pyrites, 2247; Cuprite, 2463; Galena, 2972; Iron Pyrites, 5281; Ironstone, 5564; Tenorite, 7731; Zinc Blende, 8161.

Mount Toby, 4½ miles N. of Mirani Rail. Stn. *Min.Ref.* Strontiano-calcite, *see* 613; Coal, 1647.

Geological Note: The rocks of Mt. Toby consist of sandstones, shales, and thin seams of coal belonging to the Lower Bowen Series. *See* G.S.Q. Pubs. 164, 181 for details and map.

—— Toussaint Range, 45 miles S.W. of Bowen. *Min.Ref.* Agate, *see* 1378; Chalcedony, 1347; Opal (common), 6978.

—— Tyson, 12 miles N.N.W. of Pittsworth. *Min.Ref.* Fayalite, *see* 2622.

Mount Ubi, W. of Blackall Range. *Min.Ref.* Galena, *see* 3074; Gold (alluvial) 3411, (reef) 4417A, 4418; Iron Pyrites, 5451; Silver, 7541, 7542.

Geological Note: The country rocks consist of slate with diorite, syenite, and granite intrusions. Small gold-bearing quartz reefs occur on Chinaman's Creek in the igneous and sedimentary rocks, and at their junction alluvial deposits of gold have formed along the beds of the streams. *See* G.S.Q. Pub. No. 196 for details and map.

Geological Publications: Reports—No. 196 (1905). *See* Geol. Surv. Pub. List for Title.

Mount Usher, N.E. of Mt. Morgan. *Min.Ref.* Gold, *see* 4338, 4338A; Iron Pyrites, 5406, 5406A; Silver, 7531A; Telluride of Gold and Silver, 7702; Zinc Blende, 8209A. *Statistics included in* Rockhampton returns.

Geological Note: The rocks about the Mt. Usher Mine comprise quartzites and conglomerates (containing marine fossils) of Gympie Formation (Permo-Carboniferous), in contact with diorite, with granite also in the vicinity. A gold-bearing reef traverses the sedimentary rocks and diorite, and was extensively worked some years ago.

—— Venus Mine, Mt. Steadman. *Min.Ref.* Gold, *see* 3606A; Molybdenite, 6822; Molybdite, 6869; Telluride of Gold, 7699.

Mount Victoria, W.S.W. of Mt. Morgan. *Min.Ref.* Fire Clay, *see* 2651A; Gold (alluvial) 3406, (reef) 4372, 4373; Hematite, 4801.

Geological Note: The shales, conglomerates, etc., at the base of the mountain belong to the Gympie Formation (Permo-Carboniferous). The sandstones form a capping to the shales, etc., which, with associated alluvial gold deposits belong to the Walloon Series (Trias-Jura), and which are a portion of the Stanwell Coal Measures. *See* G.S.Q. Pub. 87, p. 11; 103, p. 28 (1894) for details.

—— ——, nr. Mt. Perry. *Min.Ref.* Tourmaline, *see*, 7820.

—— Walker, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 813 and 814.

—— ——, 11 miles N.W.byN. of Clermont. *Min.Ref.* Gold (alluvial), *see* 3356.

—— ——, 7 miles S. of Hughenden. *Min.Ref.* Hematite, *see* 4674.

—— Walli, Upper Mary River. *Min.Ref.* Manganese-dioxide, *see* 6489A.

Mount Warminster Copper-Lead Mine. 20 miles (by rail) N.E. of Rockhampton. About *Lat.* 23° 45′ S.; *Long.* 150° 36′ E. Copper was discovered here in 1870 by Hill at the same time that he and his party made the discovery of gold at Mt. Chalmers. *Min.Ref.* Barytes, *see* 280; Cerussite, 1299; Chalcotrichite, 2490; Cuprite, 2477; Iron Pyrites, 5404; Jasper, 5666; Malachite, 6356; Serpentine, 7394; Silver, 7531; Steatite, 7695; Tenorite, 7741; Zinc Blende, 8203. *See also under* Govt. Ming. Jour., Report No. 101.

Geological Note: The rocks are bedded serpentine and slate, which contain quartz lodes and irregular "formations." Copper occurs sparingly in the lodes and "formations" as copper pyrites, but it also occurs as black copper oxide (Tenorite), richly impregnating the beds of slate.

—— Webster, nr. Mt. Perry. *Min.Ref.* Gold, *see* 3588; Iron Pyrites, 4988; Malachite, 6193.

Mount Wheeler, 15 miles N.E. of Rockhampton. Gold discovered here about the middle of 1868. A nugget weighing 258 oz. 11 dwt., valued at £1,000, was found on July 14th, 1869. The following day another one was picked up weighing 178 oz. 14 dwt. Other nuggets found about the same time scaled respectively 26 oz., 30 oz., 26 oz., 36 oz. (*Ref.* A.R.D.M., pp. 47 (1887), and "Early Hist. of Rockhampton," by J. T. S. Bird (1904). *Min.Ref.* Asbestos, *see* 112; Chrome Ochre, 1472; Chromite, 1486; Gold (alluvial) 3447, (reef) 4339; Magnesite, 5959; Serpentine, 7395.

—— Wheeler Group, Cloncurry. *Includes* Mt. Wheeler, Weatherley, King Fisher, and Mackinlay M. Leases, Shamrock M. Claim, and May Graham P. Area.

Mineral References: Atacamite, *see* 126A; Calcite, 459A, 459B; Chlorite, 1424A; Chrysocolla, 1505A; Copper (native), 1980A, 1980B; Copper Pyrites, 2090A, 2090B; Cuprite, 2407A; Dioptase, 2582A; Göthite, 4562A; Gold, 3469A; Iron Pyrites, 4926A, 4926B; Ironstone, 5490A; Limonite, 5780A; Malachite, 6140A; Molybdenite, 6814A; Redruthite, 7241A; Selenite, 4638A; Tourmaline, 7814A; Turgite, 7881A.

—— —— M.L. (351, etc.), Cloncurry. *Min.Ref.* Atacamite, *see* 126A; Calcite, 459A; Chlorite, 1424A; Chrysocolla, 1505A; Copper (native), 1980A; Copper Pyrites, 2090A1; Dioptase, 2582A; Göthite, 4562A; Gold, 3469A; Iron Pyrites, 4926A; Ironstone, 5490A; Limonite, 5780A; Malachite, 6140A; Selenite, 4638A; Turgite, 7881A.

—— Widgee, 14 miles W. of Gympie. *Min.Ref.* Copper Pyrites, *see* 2331; Galena, 3092; Zinc Blende, 8216.

—— Wilson (Wilson s Peak ?), 20 miles S. of Boonah. *Min.Ref.* Calcite, *see* 571; Limonite, 5899.

Mount Windsor Tin Mines, N.W. of Port Douglas. Lode tin worked here prior to 1899. Operations, according to the Warden, were abandoned in that year. *Min.Ref.* Cassiterite, *see* 829; Garnet, 3098; Wolfram, 7934A.

—— Wiseman, 85 miles S.S.W. of Rockhampton. *Min.Ref.* Calcite, *see* 566.

Geological Note: The rocks consist of sandstones and shales of Upper Bowen Formation (Permo-Carboniferous). Coal is reported to occur in the vicinity. *See* G.S.Q. Pub. No. 155 for notes and maps.

—— Witty, S.W. of Brisbane. *Min.Ref.* Gold, *see* 4226; Mispickel, 6782.

—— Wright, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4043; Iron Pyrites, 5257.

Mount Wyatt Goldfield—

Situation: *See maps,* Pls. 14, 15. The field is about 90 miles S.S.E. of Ravenswood, and 90 miles S.W. of Bowen. *Co.,* Sellheim; *Dist.* Kennedy South. Centre—about *Lat.* 20° 50′ S.; *Long.* 147° 20′ E.

Discovery: Gold discovered about 1868.

Proclamation of Field: First (and only one) gazetted, 13th October, 1885, as follows:—Commencing at a point bearing north-east for seven miles 568 links from the top of Mount Wyatt, and bounded thence on the north by a line bearing west for ten miles; on the west by a line bearing south for ten miles; on the south by a line bearing east for ten miles, on the east by a line bearing north for ten miles to the point of commencement.

Area: 64,640 acres (101 sq. miles).

Mineral Statistics: *Included in* Ravenswood Returns.

Mineral References: Gold (alluvial), *see* 3291A, (reef) 4148; Lead (Galena), 3022A; Copper (Azurite) 233, (Copper Pyrites) 2264A, 2265, (Malachite) 6332; Zinc (Zinc Blende), 8168A; Manganese (Pyrolusite), 7125A; Wolfram, 8034A. Other Minerals—Gypsum, 4628.

Geological Note: The rocks on the field consist of grits and sandstones of "Star" Formation near slates and shales of "Gympie" Formation (all Permo-Carboniferous). *See* G.S.Q. Pub. 92, pp. 31, 95 for details.

Geological Publications: *Nil.*

Warden: Stationed at Bowen. Inspector of Mines: Stationed at Charters Towers.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— Yuckawow, S.W.byW. of Mackay. *Min.Ref.* Coal, *see* 1706.

—— Yule, Brit. New Guinea. *Min.Ref.* Felspar, *see* 2650; Magnetite, 6066; Olivine, 6935.

—— Zahel (12 miles from). *Min.Ref.* Hyalite, *see* 7019.

Muckadilla Bores. *See under* Artesian Bores. Nos. 38, 353. *Min.Ref., see* 6571A.

Mudloo Copper Mines, Marodian Goldfield. *See maps,* Pls. 4, 5. *See also* A.R.D.M., pp. 155, 156 (1904). 5 miles N.N.W. of Kilkivan Rail. Stn. *Includes* Mount Mudloo, Sunnyside, and White Rocks Leases, *which see.*

Mineral References: Azurite, *see* 254A; Malachite, 6382, 6382A; Redruthite, 7309; Tetrahedrite, 7782.

Geological Note: The country rocks are granite and slates, at the junction of which there is a ferruginous quartz lode and several small veins of quartz containing copper carbonate. *See* G.S.Q. Pub. No. 179 for details and maps.

Mueller Co. Burke Dist. *See map,* Pl. 20.

Muggleton Sub-artesian Bores. *See under* Artesian Bores. No. 100.

Mulcahy's Opal Mine, Kyabra Opal Field. *Min.Ref.* Precious Opal, *see* 6948.

Muldiva—

Situation: *See maps*, Pls. 8, 9, 22. The Muldiva Silver-Lead Mines are situated about 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Lat.*, 17° 25′ S.; *Long.*, 144° 38′ E.

Population: Included in Chillagoe returns, 1910.

Mineral Statistics: Silver and Lead. *Included with* Chillagoe for years 1909 and 1910, and *with* Herberton for previous years. *See stat. tables*, Pls. 37, 38, 46, 46A.

Mineral References: Silver (Argentite) 97, (Cerargyrite) 1183, (Proustite) 7078, (Pyrargyrite) 7113, (Silver), 7463, (Native), 7552, (Stephanite), 7602; Lead (Anglesite) 29, (Cerussite) 1203-1205, (Galena) 2803, 2804, (Minium) 6589, (Pyromorphite) 7143; Copper (Azurite) 198, 198A, (Atacamite) 131; Cerussite, 1203-1205, (Chrysocolla) 1518, (Copper carbonate) 1896, (Cuprite) 2436, (Dioptase) 2583, (Malachite) 6233-6234A, (Olivenite) 6918, (Tetrahedrite) 7764; Zinc (Smithsonite) 7568, (Zinc Blende) 8086, 8087; Limestone, 639. Other Minerals—Actinolite, 4861; Calcite, 484; Harmotome, 4665; Kaolin, 5679; Natrolite, 6896; Tremolite, 4874.

Geological Note: The country rocks at Muldiva are granite, limestones, shales, quartzites, and conglomerates. At the contact of the granite with the other rocks there is a massive lode formation carrying silver-lead-copper ore. *See* G.S.Q. Pub. 69 for details.

Geological Publications: Reports—Nos. 119 (1897), 134 (1898). Map No. 220 (1900). *See under* Geol. Surv. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Chillagoe.

Mulga Downs Bores. *See under* Artesian Bores. No. 354.

Mulgar Bores. *See under* Artesian Bores. No. 416.

Mulgrave Goldfield—

Situation: *See maps*, Pls. 8, 9, 22. The goldfield is about 9 miles S.S.W. of Nelson Rail. Stn. (Cairns-Mulgrave Tramway), and 23 miles (by rail and road) S. of Cairns, and about 25 miles N.W.byW. of Geraldton. *Co.* Nares; *Dist.* Cook. Centre—about *Lat.* 17° 33′ S., *Long.* 145° 48′ E. (First return of gold was in 1879.)

Population: Less than 20.

Proclamation of Field: First (and only one) gazetted, 1st July, 1880, as follows:—Commencing on the eastern bank of the Mulgrave River at a point known as the Fisheries Crossing, thence due east to the western watershed of the Russell River; thence by that watershed southerly to the northern watershed of the Johnstone River; thence by that watershed westerly to the eastern watershed of the Barron River; thence by that watershed northerly to a point due west of the point of commencement, and thence to that point, including about 400 square miles.

Area: 256,000 acres (400 sq. miles).

Leases: Gold-mining Leases and Applications in force, nil; Miners' Homestead Leases, 4; area, 210 acres (1912).

Mineral Statistics: *Included in* "Other Goldfields" in *stat. tables and diagrams*, Pls. 36, 46, 46A, 47.

Mineral References: *See* Gold (alluvial) 3235, (reef) 3777, 3778; Iron Pyrites, 5081.

Geological Note: The rocks of the Mulgrave Valley are mainly greywacke, slate, and quartzite, but between the Lower and Upper Camps there are flows of basalt.

Geological Publications: Report—No. 48 (1888). *See under* Geol. Surv. Pub. List for title.

Warden: Stationed at Cairns; Inspector of Mines: Stationed at Herberton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— River, Russell Goldfield. *Min.Ref.* Gold (alluvial), *see* 3221; Ironstone, 5533.

Mulholland Sub-artesian Bores. *See under* Artesian Bores. Nos. 240, 241.

Muller's Glass. *Syn.* Hyalite. *Var.* of Opal, *which see.*

Mulligan's Camp, Croydon Goldfield. *See* Pl. 26. *Includes* MacArthur's P.C. Lease (370), Amazon and Black Eagle Reefs. *Min.Ref.* Gold, *see* 3537-3539.

—— P.A., Croydon Goldfield. *Min.Ref.* Gold, *see* 3538; Ironstone, 5500.

—— Gully, Annan Tinfield. *Min.Ref.* Cassiterite, *see* 809; Felspar, 2630; Iron Pyrites, 5025; Tourmaline, 7842A.

—— and Tabletop (half-way between), Croydon Goldfield. *Min.Ref.* Lithomarge, *see* 5707.

Mullin's Reef, Mareeba Goldfield. *Min.Ref.* Gold, *see* 3776.

Munbilla, on the Ipswich-Fassifern Rail. line. *Min.Ref.* Limestone, *see* 664A.

Munburra, Starcke Goldfield. Alluvial gold discovered here by Webb and party, in 1896. *Min.Ref.* Gold (alluvial), *see* 3200A, 3200B, (reef) 3664-3667F; Iron Pyrites, 5026; Silver, 7447, 7448.

Mundic. A miner's term for Iron Pyrites, Marcasite, and Mispickel.

Mundic Creek. Rises in the Razorback Range, flows for 3 miles S.byE. into the Dee R. at Mt. Morgan. Trib. Linda Cr. *Min.Ref.* Apophyllite, *see* 85; Calcite, 548; Gold, 4366; Iron Pyrites, 5421; Limonite, 5922.

—— Lode, Norton Goldfield. *Min.Ref.* Gold, *see* 4284; Iron Pyrites, 5382.

—— Reef, nr. Mt. Morgan. *Min.Ref.* Gold, *see* 4374; Iron Pyrites, 5430.

Mundoolan. Par. of (Pors. 23 and 24). 9 miles S. of Logan Village. *Min.Ref.* Coal, *see* 1788.

Mundubbera Rail. Stn. (near), Burnett River. *Min.Ref.* Limestone, *see* 624A.

Munduran Firebrick, Tile, and Pottery Co., Ltd. *See under* Monduran.

Munga Co. Warrego Dist. *See map*, Pl. 18.

Mungai Copper Lodes, 12 miles (by road) W.byN. of Mt. Perry. *Min.Ref.* Actinolite, *see* 4858; Azurite, 185; Malachite, 6210.

Mungallala Co. Maranoa Dist. *See map*, Pl. 12.

—— Town Sub-artesian Bore. *See under* Artesian Bores. No. 101.

Mungana (Terminus of the Chillagoe Railway).

Situation: *See maps*, Pls. 8, 9, 22. The town is 149 miles (by rail) W.S.W. of Cairns. Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Lat.*, 17° 14′ S.; *Long.*, 144° 30′ E.

Railway Base for Queenslander and Penzance Mines at Mt. Redcap (with tramline connection); Silver-Lead and Copper Lodes at Astonville; O.K. Copper Mine; Arbouin (now Klondyke) Copper Mines; Mitchell River Gold and Antimony Mines.

Population: Included in Chillagoe Returns, 1910.

Mineral Statistics: Silver, Lead, Copper. *See under* Herberton, in *stat. tables*, Pls. 37, 38, 39, 46, 46A.

Mineral References: Silver, 7464-7466; Lead (Cerussite) 1206-1211, (Galena) 2805-2809, (Minium) 6590, 6591; **Copper** (Azurite) 195, 197, 199-201, (Chrysocolla) 1519, (Copper Native) 1992, (Copper Pyrites) 2173-2176, (Cuprite) 2437-2441, (Dioptase) 2584, (Malachite) 6235-6243, (Redruthite) 7280, (Tetrahedrite) 7765-7767; Wolfram, 7971A; Manganese (Dioxide) 6410, 6411, (Pyrolusite) 7118-7119; Iron (Hematite) 4716-4719, (Iron Pyrites) 5077, (Ironstone) 5530, 5531, (Limonite) 5843-5845, (Mispickel) 6703A, (Pyrrhotite) 7157, (Scorodite) 7367A, (Siderite) 7407; Other Minerals—Barytes, 268; Calcite, 485; Clay, 1569; Fluorspar, 2664, 2665; Garnet, 3110-3112; Lithomarge, 5709; Selenite, 4639.

Geological Note: Silurian limestones form conspicuous lenticular outcrops in the vicinity, and are associated with mica-schist, gneiss, and granite. A variety of minerals have been formed where the limestone comes in contact with the granite, including garnet and wollastonite. Copper deposits occur in the limestone and in the garnet, and also in associated hematite and magnetite. *See* G.S.Q. Pubs. 134, 159 for details.

Geological Publications: Map No. 220 (1909). *See under* Geol. Surv. Pub. List for Title. *See also under* Govt. Mining Jour., Report—No. 12.

Warden: Stationed at Chillagoe; Inspector of Mines: Stationed at Herberton.

Mungar Junction, 48 miles (by rail) N. of Gympie. *Min.Ref.* Chalcedony, *see* 1365.

Mungin Cr., 9 miles N. of Maytown. *Min.Ref.* Gold, *see* 3691.

Mungamby Cr., trib. of Annan R. Rises near the Tableland, and flows W. to join the Annan R. near Helenvale, about 22 miles S. of Cooktown. *Min.Ref.* Cassiterite, *see* 810-812; Tourmaline, 7847; Wolfram, 7933.

Munjerie Bore. *See under* Artesian Bores. No. 167.

Munna Cr. Heads at Main Coast Range, W. of Maryborough, flows S.E. into Mary R., 5 miles N. of Miva Rail. Stn., on the Kilkivan line. Length, about 30 miles. *Min.Ref.* Azurite, *see* 260; Barytes, 285; Bornite, 436; Coal, 1817; Copper Pyrites, 2329; Cuprite, 2486; Garnet, 3147; Malachite, 6385; Pinite, 7067; Redruthite, 7310; Tile Ore, 2572; Wollastonite, 8049.

—— Copper Mines, Por. 167, Marodian, N. of Kilkivan. *Min.Ref.* Bornite, *see* 436; Garnet, 3147; Wollastonite, 8049.

GEOLOGICAL NOTE: The country rocks are limestones and slates in contact with granite. At the junction of the granite with the sedimentary rocks there are deposits of wollastonite, garnet, etc., containing bornite. *See* G.S.Q. Pub. 179 for details. *See also under* Miva for notes on coal deposits.

Munro Cr., trib. of Munna Cr., Par. of Goomgan, S.W. of Tiaro. *Min.Ref.* Copper, *see* 1865.

Munro's (Oakpark) Bore. *See under* Artesian Bores. No. 369.

Murarrie (Balmoral Brickworks), 7 miles E.N.E. of Brisbane. *Min.Ref.* Clay, *see* 1578, 1579; Coal, 1773; Gypsum, 4629.

Murchison Co. Port Curtis Dist. *See map,* Pl. 2.

Murden's (S.) Bore. *See under* Artesian Bores. No. 156.

Murgon Sub-artesian Bores. *See under* Artesian Bores. Nos. 16, 102.

Murphy (Par. of) (Por. 52), N.byE. of Murphy's Cr. Rail. Stn. *Min.Ref.* Copper Pyrites, *see* 2278; Galena, 3034.

Murphy's Cr., 19 miles N.E. of Toowoomba. *Min.Ref.* Copper Pyrites, *see* 2278; Galena, 3034; Garnet, 3136; Lignite, 1719; Spinel, 7579. *See also under* Govt. Ming. Jour., Report No. 2, *or* G.S.Q.P. No. 159, p. 4 (1901), *and* Govt. Ming. Jour., Report No. 105.

—— —— and Perseverance (between), N.E. of Toowoomba. *Min.Ref.* Copper Pyrites, *see* 2278A; Galena, 3033A; Zinc Blende, 8175A.

—— Coal Seam, Kedron Brook, S.W. of Nundah. *Min.Ref.* Coal, *see* 1770.

Murphy and Godson's M.L. (73), Star R. (Argentine) Mineral Field. *Min.Ref.* Galena, *see* 2987; Iron Pyrites, 5284; Stibnite, 7648; Zinc Blende, 8163.

Murra Murra Run Bore. *See under* Artesian Bores. No. 355.

Murray Co. Kennedy North Dist. *See map,* Pl. 16.

—— Creek, trib. of Cattle Cr., 34 miles W. of Mackay. *Min.Ref.* Coal, *see* 1648.

—— —— (on hill, W. br. of), Collaroy, N.W. of St. Lawrence. *Min.Ref.* Azurite, *see* 235A; Copper (native), 2006; Malachite, 6339.

—— and McArdle's Tin Mines, Mt. Amos, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 797; Tourmaline, 7834.

Murray's Sub-artesian Bore. *See under* Artesian Bores. No. 145.

Murua Goldfield. *See* Woodlark Is.

Murweh Lease and Resumption Bores. *See under* Artesian Bores. Nos. 356, 357.

—— Town Sub-artesian Bore. *See under* Artesian Bores. No. 128

Muscovite. *Syn.* Potash Mica, Common White Mica. *Compo.,* Silicate of alumina and potash. *Colour,* white, brown, yellow, colourless. *H.* = 2-2·5. *Sp.gr.* = 2·7-3·1. *See* notes under Mica.

6883. ——. *Assoc.with* Kyanite. *Loc.* 45 miles N.W. of McKinlay, 18 miles S.E.byE. of Cloncurry. *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* B.D.

6884. ——. *Assoc.with* Copper Pyrites, Redruthite, Bornite, Tile Ore, Malachite, Hematite, Iron Pyrites, Limonite, and Calcite, in schist, slate, and quartz. *Loc.* Timberoo Copper M.L. (716), Timberoo Group, Friedman's Cr., br. of Slaty Cr., 18 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 172-175 (1908).

6885. ——. Maximum size of plates, 3 inches square. *Loc.* Woolgar R., Cambridge Downs, 14 miles N.N.W. of Richmond Rail. Stn. (Gt. Northern line). *Co.* Yappar; *Dist.* Burke. *Ref.* G.S.M.

6886. ——. In sheets 4 inches square. *Loc.* Hughenden District, 126 miles N.E.byN. of Winton, 140 miles W.N.W. of Charters Towers. *Co.* ——; *Dist.* Burke. *Ref.* B.D.

6887. ——. In pegmatite. *Loc.* Taabinga Village, Kingaroy, 120 miles (by rail) S.S.W. of Maryborough (Kilkivan line). *Co.* Fitzroy; *Dist.* **Burnett.** *Ref.* O.R.

6888. ——. Wandoo Cr., trib. of Mundiva Cr., 10 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

6889. ——. In sheets 3 inches by 4 inches. Palmerville, 40 miles S.W.byS. of Laura Rail. Stn. (Cooktown line), 107 miles (by rail and road) S.W.byW. of Cooktown, Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Ref.* G.S.M.

6889A.——. In sheets 6 inches by 4 inches. *Loc.* nr. Einasleigh, 102 miles (by rail) S.S.W. of Almaden Rail. Stn. (Etheridge line). *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.M.

6890. ——. Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn., 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

6891. ——. In plates 7 inches square. *Loc.* Brooklands Stn., Junction Cr., br. of Einasleigh R., 30 miles S. of Fossilbrook. *Co.* Tate; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

6892. ——. In sheets 4 inches square. *Loc.* Boulia, 204 miles W.byS. of Winton. *Co.* Wills; *Dist.* **Gregory North.** *Ref.* O.R.

6893. ——. Coolgarra, 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

6894. ——. Lower Camp, Ravenswood Goldfield, 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* Q.M.

6895. ——. In coarse masses. *Loc.* Princhester, 44 miles N.W. of Rockhampton. *Co.* Liebeg; *Dist.* **Port Curtis.** *Ref.* G.S.M.

——. *See also* Mica.

Musgrave Co. Mitchell Dist. *See map,* pl. 18.

—— Telegraph Station, N.N.W. of Laura Rail. Stn. (Cooktown line). *Min.Ref.* Calcareous Sinter, *see* 746.

Muttaburra, N.byE. of Longreach. *Lat.*, 22° 34′ S.; *Long.*, 144° 31′ E. *Min.Ref.* Agate, *see* 1381; Coal (lignite), 1708; Opal (common), 6986.

—— Bore, N.byE. of Longreach. *Min.Ref.* Coal (lignite), *see* 1708.

—— Bores. *See under* Artesian Bores. Nos. 39, 40, 41, 114, 358.

—— Road Bores. *See under* Artesian Bores. Nos. 178, 245.

Mutti Mutti Bore. *See under* Artesian Bores. No. 431.

Mutton Gully, Sellheim R., S. of Bowen. *Min.Ref.* Gold (alluvial), *see* 3292.

Mutual Bore. *See under* Artesian Bores. No. 229.

Myall Plains Bore. *See under* Artesian Bores. No. 397.

—— (Par. of) Sub-artesian Bores. *See under* Artesian Bores. No. 175.

Myendetta Bore. *See under* Artesian Bores. No. 205.

Myra Sub-artesian Bores. *See under* Artesian Bores. No. 105.

Mystery Lease, Silverfield. *Min.Ref.* Anglesite, *see* 20; Galena, 2777.

—— Lode, Sandy Cr. Tin Mines. *Min.Ref.* Cassiterite, *see* 1151A.

—— Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4299; Iron Pyrites, 5395.

—— —— (Old), Clermont Goldfield. *Min.Ref.* Gold, *see* 4154.

—— 1 W. Mine, Clermont Goldfield. *Min.Ref.* Gold, *see* 4152.

—— P.C., Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2820; Gold, 3812; Iron Pyrites, 5096.

—— Reef, Pentland, Cape R. Goldfield. *Min.Ref.* Galena, *see* 2949; Gold, 4055; Iron Pyrites, 5265.

—— or Dead Cat Reef, Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2820; Gold, 3822; Iron Pyrites, 5090, 5092, 5096, 5097.

Nail-head Spar. *Var. of* Calcite, *which see.*

Nambour, 41 miles S.E. of Gympie. *Lat.*, 26° 38′ S.; *Long.*, 152° 59′ E. *Min. Ref.* Coal, *see* 1716. *See under* Yandina for Geological Note, *also under* Supplementary Report List, No. 46, for further reference.

Namoi Downs Bore. *See under* Artesian Bores. No. 331.

Nanango Bore. *See under* Artesian Bores. No. 359.

Nanango Goldfield—

Situation: *See maps,* Pls. 4, 5. The field is 96 miles (by rail) S.S.W. of Theebine Rail. Stn. (North Coast line), 224 miles (by rail) W.N.W. of Brisbane, and 135 miles (by rail) S.S.W. of Maryborough. *Cos.* Fitzroy and Cavendish; *Districts,* Burnett and Moreton. Centre about *Lat.* 26° 39′ S.; *Long.* 152° 1′ E.

Population: 504 (1912). Only a few are engaged in mining.

Proclamation of Field: First gazetted, 17th January, 1890; last alteration, 4th July, 1912, as follows:—Commencing on Sandy Creek at the south-east corner of a reserve for pound R 104, proclaimed in *Government Gazette,* 1878, volume 1, page 403, being the eastern termination of Dalby street, and bounded thence on the west by a line bearing north two miles; on the north by a line bearing east to the eastern boundary of portion 12, by that portion north-westerly to the south-eastern corner of portion 171v, by a line and the southern boundaries of portions 176v, 177v, and 180v to its south-east corner, by the eastern boundary of 180v northerly to the south-west corner of portion 261, by the south boundary of that portion and part of portion 147 about forty-three chains easterly; on the east by a line bearing south about six miles seventeen chains; on the south by a line bearing west to the north-east corner of portion 61v; again on the west by a line, the eastern boundaries of portions 64v, 65v, 68v, 70v, 71v, 261, 262, 263, the western side of George street northerly to the north side of Appin street, by that street easterly to the corner of a recreation and water reserve R 111, proclaimed in *Government Gazette,* 1900, volume 2, page 1622, by the western boundary of that reserve northerly to the north-west corner of same, by a line westerly to the western side of George street; thence by that street northerly to Sandy Creek; and by that creek north-westerly to the point of commencement.

Area: 15,360 acres (24 sq. miles).

Leases: Mineral Leases and Applications in force, 7; area, 167 acres. Miners' Homestead Leases and Application, No. 143; area, 1,024 acres (1912).

Mineral Statistics: *Included in* "Other Goldfields" in *stat. tables and diagrams,* Pls. 36, 46, 46a, 47.

Mineral References: Gold, *see* 3624a-c, 4199, 4200; Bismuth (native), 325. Other Minerals, Agate, 1367; Bloodstone, 1383; Carnelian, 1384; Olivine, 6936; Tourmaline, 7823.

Geological Note: The rocks of this goldfield comprise granite, felspathic sandstone, grey shale, kaolin, and basalt. Gold-bearing quartz reefs traverse the felspathic sandstone, and sometimes gold is found in the sandstone itself. To the south there are several outcrops of granite, in which quartz reefs and porphyry dykes are exposed. The slates also contain reefs, but they have not proved to be gold-bearing. The basalt occupies the top of the ranges in the vicinity. *See* G.S.Q. Pub. 29 for details.

Geological Publications: Reports—Nos. 29 (1886), 169 (1901). *See under* Geol. Surv. Pub. List for title. *See also under* Govt. Ming. Jour., Report No. 69.

Warden and Inspector of Mines: **Both stationed at Gympie.**

Chamber of Commerce: F. M. S. Rowlands, secretary.

Reports: (Inspector's and Warden's) monthly (usually) in G.M.G. Jour.; annually in A.R.D.M.

—— Dyke Syndicate's Shaft, Nanango Goldfield. *Min.Ref.* Gold, *see* 3624c.

Nancy Lee Reef, Golden Gate, Croydon Goldfield. *Min.Ref.* Gold, *see* 3519; Ironstone, 5496.

—— —— Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1103.

Nannam Silver Mine, Montalbion. *Min.Ref.* Native Silver, *see* 7549.

Nansen's Mine, Mary Cr., Gympie. *Min.Ref.* Manganese-dioxide, *see* 6493; Rhodonite, 7323a.

Narada Downs Sub-artesian Bores. *See under* Artesian Bores. No. 402.

Narambla Bore. *See under* Artesian Bores. No. 313.

Nares Co. Cook Dist. *See map,* Pl. 8.

Narine Bore. *See under* Artesian Bores. No. 362.

Narlene (Cawildi) Bore. *See under* Artesian Bores. No. 397.

Narupai Mine, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3821.

Nash Co. Burke Dist. *See map*, Pl. 20.

Nash's Gully, Gympie. *Min.Ref.* Gold (alluvial), *see* 3413.

Nashville. One of the old names for the Gympie Goldfield, and the present name for a portion of it.

Natal Downs. Probability of Artesian Water on. G.S.Q. Pub. 143, p. 22 (1898).

National Reef, Lane's Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3715.

Native Arsenic. *See under* Arsenic.

Native Bee Diggings, N.N.W. of Clermont. *Min.Ref.* Gold (alluvial), *see* 3334.

Native Bismuth. *See under* Bismuth, 323, etc.

—— Cat Cr., 6 miles W. of Stanwell. *Min.Ref.* Coal (Lignite), *see* 1796; Gold (alluvial), 3397; Hornblende, 4845.

Native Cat Gold Mine, Stanwell. *Min.Ref.* Gold, *see* 4342; Iron Pyrites, 5408.

GEOLOGICAL NOTE: The rocks consist of slate and quartzites of Gympie Formation (Permo-Carboniferous), and sandstones and shales of Ipswich Formation (Trias-Jura). Gold-bearing quartz reefs exist in the older rocks, and alluvial gold is to be found in the watercourses.

—— Companion Group, Cloncurry. *Includes* Native Companion R.C., Oliver Twist M.C., and others. *Min.Ref.* Chrysocolla, *see* 1490; Copper (native), 1975; Copper Pyrites, 2062; Cuprite, 2384; Redruthite, 7206.

—— —— R.C. (19), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1490; Copper Pyrites, 2062; Redruthite, 7206.

Native Copper. *See under* Copper.

—— Girl Reef, Cradle Cr., Palmer Goldfield. *Min.Ref.* Gold, *see* 3682.

Native Gold. *See under* Gold.

Native Mercury. *See under* Mercury (native).

—— Metals. *See* Arsenic, Bismuth, Copper, Gold, Mercury, Osmiridium, Platinum, and Silver.

Native Silver. *See under* Silver.

—— P.P.A. (129), Mt. Flora G. and M. Field. *Min.Ref.* Chrysocolla, *see* 1534A; Hematite, 4769A; Malachite, 6339C.

—— Youth Tin Claim, nr. Rossville, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 823; Tourmaline, 7849.

Natrolite. *Syn.* Mesotype. *Compo.*, Hyd. silicate of alumina and soda. *Colour*, white. *Lustre*, Vitreous or pearly. Usually acicular. A zeolite. *H.* = 5-5·5. *Sp.gr.* = 2·1-2·2.

6896. ——. Muldiva, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

6897. —— *Assoc.with* Chabazite, *var.* Phacolite, Calcite, and Ferro-Calcite, in basic volcanic tuff, in railway cuttings. *Loc.* Between Spring Bluff and Harlaxton Rail. Stns., 5 miles N. of Toowoomba, 101 miles (by rail) W.byS. of Brisbane. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* B.D.

6898. ——. In basalt. Deep Lead, Herberton, 12 miles S.S.W. of Atherton Rail Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

6898A. ——. In decomposed basalt. Rosella Creek, Havilah, Bowen River. *Co.* Drake; *Dist.* Kennedy South.

6899. ——. In the basalt. Clermont Goldfield, 229 miles (by rail) W.byN. of Rockhampton. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* P.R.S.Q., vol. 4, p. 69 (1887).

6900. ——. In vesicular basalt. *Loc.* "The Falls," Mapleton, about 7 miles S.W. of Nambour Rail. Stn. (North Coast line), 65 miles N.byE. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Ref.* L.C.B.

6901. ——. Boonah, 59 miles (by rail) S.S.W. of Brisbane (Fassifern Br. line). *Co.* Churchill; *Dist.* Moreton. *Ref.* B.D.

6902. ——. *Assoc.with* Calcite, Chabazite, and Magnesite, in decomposed basalt. *Loc.* Pors. 27 and 81v, Mt. Davidson, 5 miles E.S.E. of Toowoomba. *Co.* Churchill (*ante*). *Ref.* B.D.

6903. ——. *Assoc.with* Analcime as inclusions in calcite. *Loc.* Morinish Goldfield, 29 miles N.W. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* G.S.M.

Natural Gas—

Geological Note: A bore put down for water at Roma, on the Western Railway line, tapped an underground supply of inflammable gas. This gas has been derived, probably, from a regional disturbance of the Walloon Coal Measures which, below more recent strata, extend in this direction from the north. For information concerning the bores which have produced inflammable and other gases, *see* Q.G.M.J., vol. 11, p. 391 (1910), G.S.Q. Pub. 175, p. 4 (1902), and *under* Artesian Bores and Notes. Nos. 24 (1), 46 (2), 387, 406 (3), 439 (2). *See also note under* Oil.

6904. —— ——. In bore. Roma, 318 miles (by rail) W.byN. of Brisbane. *Co.* Waldegrave; *Dist.* **Maranoa.** *Analysis:* Carbon dioxide = 1·5 per cent.; Carbon monoxide = 5·8 per cent.; Benzine series = 5·0 per cent.; Olefine series = 1·5 per cent.; Paraffin series, including Ethane, 9·8 per cent., = 82·4 per cent.; Nitrogen and residual gas = 3·4 per cent.; Oxygen = nil; Hydrogen = nil. *Ref.* G.S.Q. Pub. 175, p. 4 (1902).

6905. —— ——. *Compo.*, undetermined. In bore in coal measures. *Loc.* nr. Rosewood Rail. Stn., 35 miles (by rail) W.S.W. of Brisbane. *Co.* Churchill; *Dist.* **Moreton.** *Ref.* B.D.

Natural Oil. *See note under* Oil, and Oil-bearing Shale.

Neardie. *See* Neerdie.

Nebine Co. Maranoa Dist. *See map*, Pl. 12.

Nebine-Dulla Bore. *See under* Artesian Bores. No. 165.

Nebo Goldfield (Mt. Britton)—

Situation: *See maps*, Pls. 10, 11, 14, 15. The goldfield is about 20 miles S.W. of Eton Rail. Stn., 43 miles (by rail and road) S.W.byS. of Mackay. *Cos.* Carlisle and Wodehouse; *Dists.* Kennedy South and Leichhardt. Nebo Centre—about *Lat.* 21° 26′ S.; *Long.* 148° 35′ E.

Discovery: The field was opened in 1881, when several nuggets were found in the alluvial deposits of Nuggety Gully and Oaky Creek.

Proclamation of Field: First gazetted, 25th April, 1881; Last alteration, 5th August, 1887, as follows:—Commencing at a point 21 miles east of the extreme northerly point of Lake Elphinstone, and bounded thence on the east by a line bearing north 20 miles; on the north by a line bearing west 10 miles; on the west by a line bearing south 20 miles; and on the south by a line bearing east 10 miles to the point of commencement;—exclusive of Agricultural Reserve No. 2, situated on Moonlight and Oakey Creeks.

Area: 128,640 acres = 201 sq. miles.

Mineral Statistics: *Included in* "Other Goldfields" in *stat. tables and diagram*, Pls. 36, 46, 46a, 47.

Mineral References: **Gold,** *see* (alluvial) 3366, (nugget) 3442, 3443, (reef) 4185-4188; Lead (Cerussite) 1294, (Galena) 3025, (Minium) 6640; Copper (Atacamite) 136; Iron (Iron Pyrites) 5329, (Ironstone) 5602. Other Minerals—Calcite, 518-521; Chlorite, 1462; Common Opal, 6984; Pleonaste, 7590; Steatite, 7694a.

Geological Note: The rocks of the Nebo Goldfield include slates, sandstones, and diorite belonging to the Bowen River Formation (Permo-Carboniferous), the diorite being partly interbedded with, and partly intruding, the shales and sandstones. Reefs occur in the diorite and slate, and have proved very productive. Alluvial gold in large quantities has been obtained from the watercourses near the reefs.

Geological Publications: Reports—Nos. 39 (1887), 48 (1888). *See under* Geol. Surv. Pub. List for title. *See also* A.R.D.M., p. 175 (1909).

Warden: Stationed at Mackay. Inspector of Mines: Stationed at Rockhampton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Nebo (Fort Cooper), 51 miles S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt.

Geological Note: The rocks in and about Nebo consist of basalt with underlying coal measures belonging to the Upper Bowen Formation (Permo-Carboniferous). Good coal seams outcrop about Walker and Bee Creeks, westerly from Nebo. *See* G.S.Q. Pubs. Nos. 39 and 200 for details.

—— Road Brickworks, nr. Mackay. *Min.Ref.* Clay, *see* 1573.

Needlewood Sub-artesian Bore. *See under* Artesian Bores. No. 421.

Neenah Park Sub-artesian Bore. *See under* Artesian Bores. No. 167.

Neerkol Creek Bore (Stanwell). *See* Quarry Creek *under* Coal Bores.

Neerdie Antimony Mines, 14 miles N.byE. of Gympie. Antimony discovered in 1872. *Min.Ref.* Cervantite, *see* 1312; Stibnite, 7660.

Geological Note: The rocks comprise shales of Gympie Formation, coal measures of Burrum Formation, and granite. Antimony occurs as Stibnite in lodes made up of broken shale and quartz veinlets, and has associated with it small quantities of gold and silver. *See* G.S.Q. Pub. 59 for details.

Neill's Paradise Mine, Paradise Goldfield. *Min.Ref.* Gold, *see* 3615; Ironstone, 5515.

Neilson Creek, nr. Mt. Jukes, W. of Mackay. *Min.Ref.* Ilmenite, *see* 4900; Magnetite, 6025.

Neila Ponds Run Bores. *See under* Artesian Bores. No. 360.

Nelia Bore. *See under* Artesian Bores. No. 407.

Nelly Mine, Chillagoe. *Min.Ref.* Copper Ore, *see* 2029A; Silver (native), 7550.

—— Grant Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1104; Mica, 6559; Wolfram, 8022.

Nelson's (Bylong) Bore. *See under* Artesian Bores. No. 188.

Nepheline. *Compo.*, silicate of alumina, potash, and soda. *Colour*, white, etc *Lustre*, greasy. *H.* = 5·5-6. *Sp.gr.* = 2·5-2·6

6906. ——. In basalt. *Loc.* Mt. Beardmore, Balcomba Range, near Mackenzie R., 24 miles N. of Duaringa Rail. Stn. (Central line), 90 miles (by rail and road) W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* B.D.

Nerang Cr., 56 miles S.byE. of Brisbane. *Min.Ref.* Opal, *see* 6996; Tripolite, 7033, 7033A, 7033B. *Geological Note:* The rocks here include basalt and sandstones belonging to the Bundamba (?) Series, a deposit of Tripolite occurring interbedded with the basalt all through this district.

—— —— (mouth of), Tweed Heads. *Min.Ref.* Gold, *see* 3372; Magnetite, 6034.

—— Rail. Stn. (4 miles S. of), 53 miles (by rail and road) S.E. of Brisbane. *Min.Ref.* Gold, *see* 4229, 4230; Ironstone, 5616; Silver, 7512.

—— to Tweed Heads, S.E. of Brisbane. *Min.Ref.* Gold (alluvial), *see* 3372.

Nerum Creek, 40 miles N.N.W. of Brisbane. *Min.Ref.* Gold, *see* 4219.

Netherby Rail. Stn., 35 miles N.byW. of Gympie. *Co.* March; *Dist.* Wide Bay. Railway Base for Mt. Bopple Graphite Mines.

Nettle's or Innot's Cr., 7 miles S.S.E. of Coolgarra. *Min.Ref.* Halite, *see* 4655; Mineral Water, 6570; Siliceous Sinter, 7023.

Nettle's Cr. Wolfram Mines, 4 miles E. of and 3 miles S.E. of Coolgarra.

Mineral References: Cassiterite, *see* 1136-1138; Corundum, 2371; Manganese-dioxide, 6430; Molybdenite, 6856; Monazite, 6879; Scheelite, 7352; Wolfram, 8030.

Geological Note: The rocks of this locality comprise slate, granite, greisen, and aplite. Wolfram and tin occur in the slates and greisen close to granite, both in defined quartz lodes and in irregular quartz masses, and sometimes associated with Monazite. The mines produce Wolfram of a high quality.

Nevada Mine, Argentine Silver Field. *Min.Ref.* Galena, *see* 2988.

Never-can-tell Tin Claim, Coolgarra. *Min.Ref.* Cassiterite, *see* 1051; Topaz, 7797.

Never Never Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4285; Iron Pyrites, 5383; Mispickel, 6794.

Neville Forest Bore. *See under* Artesian Bores. No. 356.

Neville Wolfram Mine, 1 mile S. of Koorboora. *Min.Ref.* Wolfram, *see* 7968A. Note: Although this mine produces an ore of very low grade it has yielded the largest quantity of dressed ore in Queensland.

New Aberdare Colliery (Harris Bros.), Bundamba Coal Area. *Min.Ref.* Coal, *see* 1741.

—— Brilliant Freeholds G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2896; Gold, 3918; Iron Pyrites, 5184.

—— Cannindah Stn., 40 miles S.W. of Miriam Vale Rail. Stn. *Min.Ref.* Limestone, *see* 630.

—— —— and Mt. Perry (on road between), 20 miles from Mt. Perry Rail. Stn. *Min.Ref.* Limestone, *see* 631.

New Chum Colliery, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1741A. *See also under* Dinmore, *under* Coal Bores.

—— —— Coal Seam, Dinmore and Whitwood Collieries, 1 mile S.W. of Dinmore Rail. Stn. *Min.Ref.* Coal, *see* 1736.

—— —— Gold Mine, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3813; Iron Pyrites, 5097.

—— —— Reef, Big Hill, Talgai Goldfield. *Min.Ref.* Gold, *see* 3862.

—— —— Tin Lease (194), Mt. Brown, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1156; Cerussite, 1247; Fluorspar, 2683; Mispickel, 6754.

—— Cannindah. *See* Mount Cannindah.

—— —— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1105.

—— —— —— —— (Brilliant North Lease), Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 762; Graphite, 4571.

—— Colliery, North Ipswich Coal Area. *Min.Ref.* Coal, *see* 1742.

—— Consols Mine, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4011; Iron Pyrites, 5235; Mispickel, 6745.

—— Constitution Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4286; Iron Pyrites, 5384; Mispickel, 6795.

—— Craven's Caledonia G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2897; Gold, 3918A; Iron Pyrites, 5185.

—— Dawn Mine, Gympie Goldfield. *Min.Ref.* Galena, *see* 3085; Iron Pyrites, 5463; Jasper, 5649.

—— Einasleigh Copper Mine. *See. under* Govt. Ming. Jour., Report No. 96.

—— England No. 1 S. Mine, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2223; Gold, 4024; Iron Pyrites, 5246; Zinc Blende, 8141.

—— —— Reef, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2224; Gold, 4025; Iron Pyrites, 5247; Zinc Blende, 8142.

—— Find Reef, Mt. Clifford. *Min.Ref.* Gold, *see* 4167.

—— Heights of Alma, Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3652.

New Homestead Diggings, 46 miles (by rail) W.S.W. of Charters Towers. *Include* Agnes Howson, Ada, Callaghan, Evening Star and Wild Scotchman Reefs. *Min.Ref.* Copper Pyrites, *see* 2237; Galena, 2952; Gold, 4066-4068; Iron Pyrites, 5271.

—— Idea Mine, Clermont Goldfield. *Min.Ref.* Gold, *see* 4153; Siderite, 7416.

—— —— Reef, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2229A; Gold, 4026.

—— Imperial Mine, Charters Towers Goldfield. *Min.Ref.* Gold, *see* 3919; Iron Pyrites, 5186; Mispickel, 6742.

—— Marathon Bore (Bradbury's), nr. Hughenden. *Min.Ref.* Coal, *see* 1595. *See* Coal Table, No. 245.

—— Moon Mine, Muldiva. *Min.Ref.* Anglesite, *see* 29; Copper carbonate, 1896; Galena, 2804.

—— —— Reef, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2927; Gold, 4020; Iron Pyrites, 5241; Zinc Blende, 8140.

—— Moonta Mine, Boolboonda Goldfield. *Min.Ref.* Copper (ore), *see* 2020; Copper Pyrites, 2122; Gold, 3566.

—— Queen G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2898; Gold, 3290; Iron Pyrites, 5187.

—— Reef (Western Reefs), Clermont Goldfield. *Min.Ref.* Gold, *see* 4144.

—— ——, 5 miles W. of Kilkivan. *Min.Ref.* Cinnabar, *see* 1556.

—— River Bank Colliery, Burrum Goldfield. *Min.Ref.* Coal, *see* 1808.

—— Silksworth Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4304; Iron Pyrites, 5396; Limonite, 5909.

—— Towers Extended Mine, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2899; Gold, 3921; Iron Pyrites, 5188; Zinc Blende, 8126.

—— West Moreton Colliery, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1742A.

—— Year's Extd. Claim, Kilkivan Goldfield. *Min.Ref.* Gold, *see* 4403A; Iron Pyrites, 5448A.

—— —— Reef, Kilkivan Goldfield. *Min.Ref.* Azurite, *see* 257; Gold, 4404; Malachite, 6381.

—— —— Gift Mine, Sellheim Mineral Field. *Min.Ref.* Cerussite, *see* 1290; Clay, 1576; Galena, 3015; Minium, 6634.

New Zealand Gully, Cawarral Goldfield, E.N.E. of Rockhampton. Gold was discovered here in 1868. *Min.Ref.* Cerargyrite, *see* 1185; Gold, 4327-4329; Iron Pyrites, 5402; Limonite, 5912. *See also* Supplementary Report List, No. 6.

——— ——— ———, Boyne Goldfield. *Min.Ref.* Calcite, *see* 527A; 527B; Gold (alluvial) 3377, (reef) 4252, 4253; Hematite, 4786, 4787; **Limestone, 669.**

——— ——— ———, Towalla Goldfield. *Min.Ref.* Gold, *see* 3785, 3787.

——— ——— P.C. (593), South (655), and South Junction (626) Leases, Gympie Goldfield. *Min.Ref.* Gold, *see* 4462-4464.

——— ——— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4520.

——— ——— ———, Normanby Goldfield. *Min.Ref.* Copper carbonate, *see* 1943; Gold, 4132.

——— ——— ———, Towalla Goldfield. *Min.Ref.* Gold, *see* 3787.

——— ——— Tin Mine, Emu Cr., 12 miles S.E.byE. of Petford Rail. Stn. *Min.Ref.* Cassiterite, *see* 933.

Newark Bore. *See under* Artesian Bores. No. 227.

Newcastle Co. Burnett Dist. *See map*, Pl. 4.

——— Colliery, Blair Athol, 12 miles N.W. of Clermont. *Min.Ref.* Coal, *see* 1671A.

——— M.L. (595) Cloncurry. *Min.Ref.* Malachite, *see* 6158A.

Newcastle Range (Tel. line), 8 miles E. of Georgetown. *Min.Ref.* Copper Ore, *see* 2025D; Orthoclase, 7039.

Newellton (Silver Valley), (*see also* Dry River)—

SITUATION: *See maps*, Pls. 16, 17, 22. Head of Dry River, 9 miles S.W. of Herberton, and 10 miles S.E.byS. of Stannary Hills Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Lat.*, 17° 26′ S.; *Long.*, 145° 17′ E.

DISCOVERIES: Tin discovered in Lancelot Mine in 1895. Silver discovered by Harrold Bros. in 1881.

POPULATION: 77 (Estimated by Warden, 1910. No official estimate since this year).

MINERAL STATISTICS: Silver, Tin. *See under* Herberton, *in stat. tables,* Pls. 37, 38, 46, 46A.

MINERAL REFERENCES: **Silver,** 7480; Lead (Anglesite) 42, (Cerussite) 1225, (Galena) 2864, (Lead) 5725, (Pyromorphite) 7146; Copper (Azurite) 214, (Copper, native) 2000, (Copper Ore) 2035, (Copper Pyrites) 2214, (Olivenite) 6917A; **Tin** (Cassiterite) 1139-1141; Bismuth (native) 345, 346; Zinc (Calamine), 443, (Zinc Blende) 8112, 8113; Iron (Iron Pyrites) 5144, (Ironstone) 5547, 5548, (Magnetite) 6007; Limestone), 650. Other Minerals—Aragonite, 89; Calcite, 496; Chlorite, 1456, 1457; Fluorspar, 2679; Garnet Rock, 3122; Magnesite, 5947; Cinnabar, 1541A; Enargite, 2590A.

GEOLOGICAL NOTE: The rocks about the Lancelot Tin Mine are quartz schists and clay schists, the lode being well-defined and parallel to the stratification. The gangue of the tin ore is siliceous, the ore being mixed with considerable quantities of copper pyrites and metallic bismuth.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 119 (1897), 192 (1904). *See* Geol. Surv. Pub. List for title.

WARDEN AND INSPECTOR OF MINES: Both stationed at Herberton.

Newhaven Prov. Goldfield, 24 miles W.N.W. of Charters Towers. *Min.Ref.* Gold, *see* 3981A.

Newman (J. M.) and **Brown (F. Campbell).**

On the Geology of Mount Morgan, Queensland. Q.G.M.J., vol. 11, pp. 334-337 (1910).

Newports (Runnymeade) Bore. *See under* Artesian Bores. No. 196.

Newsome's Claim, Retreat Cr., Anakie. *Min.Ref.* Ruby, *see* 2363.

Newstead Bore. *See under* Artesian Bores. No. 295.

Newton's Shaft (Day Dawn Lease), Kangaroo Hills Mineral Field. *Min.Ref.* Bornite, *see* 426; Cerussite, 1238; Lievrite, 5737; Malachite, 6308.

Nicholl's Lease (327), Gympie Goldfield. *Min.Ref.* Gold, *see* 4465.

Nicholson Co. Burke Dist. *See map,* Pl. 20.

Nicholson's (Spring Valley) Sub-artesian Bore. *See under* Artesian Bores. No. 267.

Nickavilla Co. Warrego Dist. *See map,* Pl. 18.

Nickel (Ni.). *Atom. Wt.* = 58·68; *Sp. gr.* = 8·9. *Colour,* white-metallic. Malleable. Tenaceous. Strongly magnetic.

MINERALS: *See* Noumeite, Pyrrhotite, *also* references further on.

MINERAL NOTE: Nickel in small quantities is found in association with ores of manganese, cobalt, and copper, and with pyrrhotite. Traces of nickel have been found in the rocks of the Glasshouse Mountains and other peaks in the district between Landsborough, Gympie, and the coast, occurring as a constituent of many of the intrusive masses disturbing the Mesozoic Coal Measures, and in some of the glancophane schists of this district. Nickel is found in Pyrrhotite at the Hector Mine near Rockhampton, but no determinations have been made to show the average percentage of the mineral in the ore.

USES: Nickel is chiefly in demand for the manufacture of German silver, an alloy of the metal with copper and zinc. It is used as a protecting and hardening cover for articles made of iron, copper, zinc, type-metal, etc., on which it is deposited electrolytically. With iron it forms ferro-nickel, an alloy commonly used to produce in steel the properties of hardness, strength, and elasticity. Chrome-nickel, tungsten-nickel, and molybdenum-nickel have somewhat the same properties. Nickel alloyed with copper is used in foreign coinage, and as a covering to rifle bullets to prevent their flattening after being fired.

VALUES. *See* Table under Metal Values in London for maximum and minimum quotations for all years since 1892.

6907. ——. Chrysoprase. *Loc.* On Range, 1 mile E. of Broadsound Road, nr. Princhester, 50 miles N.W. of Rockhampton. *Co.* Liebeg; *Dist.* **Port Curtis.** *Ref.* G.S.M.

6908. ——. On Mt. Allen, Gigoomgan Run, Tiaro, 35 miles S.W. of Maryborough. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

6909. ——. *Assoc. with* Manganese-dioxide and Asbolane, in cobalt lode. *Loc.* Mt. Clara Hills, 1½ mile S. of Mt. Clara, Black Snake, 7 miles S. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pubs. 28, p. 7 (1886); 38 (1887); and G.S.M.

6910. ——. *Assoc. with* Manganese-dioxide, Rhodonite, Rhodochrosite, Cobalt Oxide, and Copper Oxide, in cobalt lode. *Loc.* Mt. Coora, Black Snake, 8 miles **S.S.E. of** Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Assays*: *See* 1837. *Ref.* G.S.Q. Pubs. 28 (1886), 38 (1887), 48, p. 59 (1888), and 169, pp. 16-19 (1901).

Nicol's Lode, Lode Creek, Stanthorpe. *Min. Ref.* Cassiterite, *see* 987.

Nicoll's (Whitewood Ridge) Bore. *See under* Artesian Bores. No. 865.

Nigger Cr., br. of Wild R., 3 miles S.S.W. of Herberton. *Min. Ref.* Cairngorm, *see* 7180; Cassiterite, 1106; Graphite, 4597; Halloysite, 4660; Common Opal, 6976; Wood Opal, 7006; Spinel, 7580; Topaz, 7803.

Nightshade, Fossilbrook, 34 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line). *Min. Ref.* Cassiterite, *see* 968; Molybdenite, 6845; Wolfram, 7978.

Niko Bore. *See under* Artesian Bores. No. 142.

Nil Desperandum Mine, Argentine Silver Field. *Min. Ref.* Gold, *see* 4090.

—— —— ——, Charleston, Etheridge Goldfield. *Min. Ref.* Copper Pyrites, *see* 2147; Galena, 2749; Gold, 3721; Iron Pyrites, 5042; Mispickel, 6681; Redruthite, 7278A.

—— —— ——, Woodville, Hodgkinson. *Min. Ref.* Stibnite, *see* 7626.

—— —— ——, Paradise Goldfield. *Min. Ref.* Gold, *see* 3616; Iron Pyrites, 5003.

—— —— ——, Ridgelands Goldfield. *Min. Ref.* Gold, *see* 4340A; Iron Pyrites, 5407B.

—— —— ——, Ulam Goldfield. *Min. Ref.* Gold, *see* 4299; Iron Pyrites, 5395.

—— —— ——, Watsonville. *Min. Ref.* Cervantite, *see* 1306; Stibnite, 7629.

—— —— Reef, Ravenswood Goldfield. *Min. Ref.* Gold, *see* 4011; Iron Pyrites, 5235; Mispickel, 6745.

Nine-Mile, Lancewood Tin Mines, Brookland Stn. *Min.Ref.* Beryl, *see* 291; Cassiterite, 970; Topaz, 7791.

—— —— Bores. *See under* Artesian Bores. Nos. 110, 235, 245.

—— —— Creek, br. of Tate R., nr. Fisherton. *Min.Ref.* Cassiterite, *see* 940.

Ninevah Bore. *See under* Artesian Bores. No. 159.

Ninian Bay, Cape York Peninsula. *Min.Ref.* Gold (alluvial), *see* 3216.

Niobate of Iron. *See* Columbite.

Niobite. *Syn.* Columbite, *which see.*

Niobium. (Nb). *Atom.Wt.* = 93·5. *Sp.gr.* = 7·06. *Colour,* steel-grey with a very bright lustre. Occurs most frequently with Tantalum. Niobium has no commercial uses.

MINERAL: *See* Columbite.

Nipper Claim, Black Ridge, Clermont. *Min.Ref.* Coal Bands, *see* 1663; Gold (alluvial), 3304.

Nitre Deposits do not exist in the State, the natural conditions not being favourable for their formation.

Nitz's (Bergen) Sub-artesian Bore. *See under* Artesian Bores. No. 233.

Nive Co. Warrego Dist. *See map,* Pl. 18.

—— Downs Run Bores. *See under* Artesian Bores. No. 361.

—— Parish Sub-artesian Bore. *See under* Artesian Bores. No. 42.

No. 4 River, vicinity of Mt. Yule, Brit. New Guinea. *Min.Ref.* Felspar, *see* 2650; Magnetite, 6066; Olivine, 6935.

Noble Island, 74 miles N.W. of Cooktown. *Co.* Melville; *Dist.* Cook. *Lat.,* 14° 32′ S.; *Long.,* 144° 47′ E. *Min.Ref.* Gold, *see* 3767; Native Copper, 1995; Native Silver, 7553; Wolfram, 7972. *See also under* Govt. Mining Jour., Report No. 87.

Noble Serpentine. *Var. of* Serpentine, *which see.*

—— Tin Mining Co., and Lode Cr. Tin Mining Co.'s Blocks (351 and 352), head of Lode Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 988; Molybdenite, 6849; Wolfram, 7988.

Nogoa R., nr. Emerald. *Min.Ref.* Opal (common and wood), *see* 6982, 6985.

Non-conductors of Heat or Cold. *See* Asbestos, Tripolite.

Nonda Downs Bore. *See under* Artesian Bores. No. 217.

—— Railway Station Bore. *See under* Artesian Bores. No. 77.

Nondah Cr. Rises 28 miles W. of Chillagoe, and flows N.Wly. into Walsh R. *Min.Ref.* Azurite, *see* 186; Chalcanthite, 1318; Cuprite, 2425; Gold, 3668; Ironstone, 5517; Malachite, 6211; Tetrahedrite, 7760.

Nonpareil Silver Mine, Star R. (Argentine) Mineral Field. *Min.Ref.* Cerusite, *see* 1274; Galena, 2989; Minium, 6620.

Noondoo Run Bores. *See under* Artesian Bores. No. 362.

Noontide M. Lease (239), Cloncurry. *Min.Ref.* Gold (traces), *see* 3470; Malachite, 6142; Redruthite, 7243; Siderite, 7402; Turgite, 7883.

Noorama Run Bores. *See under* Artesian Bores. Nos. 363, 364.

Noorana Co. Warrego Dist. *See map,* Pl. 18.

Noorindoo Run Bore. *See under* Artesian Bores. No. 365.

Noosa (nr.), 15 miles N.N.E. of Yandina, N. of Brisbane. *Min.Ref.* Coal, *see* 1825; Hematite, 4809: Iron Pyrites, 5472. *Geological Note:* Rocks include Trias-Jura Coal Measures with intrusive dykes of granite and diorite.

Nora Cr. Bore. *See under* Artesian Bores. No. 161.

Norah Park Sub-artesian Bore. *See under* Artesian Bores. No. 351.

—— Reef, Iguana Hill, Croydon Goldfield. *Min.Ref.* Gold, *see* 3488A; Graphite, 4584; Ironstone, 5497.

Norley Co. Warrego Dist. *See map,* Pl. 18.

Norman Co. Burke Dist. *See map,* Pl. 20.

—— Park, 2 miles E. of South Brisbane. *Min.Ref.* Opal (common), *see* 6991.

Normanby Goldfield—

Situation: *See maps*, Pls. 14, 15, 16, 17. The field is about 46 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Co.* Carlisle; *Dist.* Kennedy South. Centre—about *Lat.* 20° 39′ S., *Long.* 148° 18′ E.

Discoveries: Gold was found by Sam Verge about 1872, when the Grace Darling, Albion, Star of Hope, and other reefs were discovered. Tin was found here in 1872.

Population: 46 (estimated by Warden in 1910. No returns since this year).

Proclamation of Field: First gazetted, 28th January, 1887; last alteration gazetted 15th January, 1904, as follows:—Commencing at Mount Roundback on the eastern boundary of Ellen Valley Resumption, and bounded thence on the north by the Normanby Range east about 9¼ miles to the western boundary of Mountain Home Lease, by that boundary north to the Andromache River, by that river upwards southerly to the north-west corner of Occupation Lease No. 6, by the north boundary of that license east about 3¼ miles, by the west and part of the north boundaries of Cattle Vale Lease north and east about 3½ miles to the watershed between the Proserpine and Lethe brook Rivers, by that watershed northerly about 9¾ miles to the Proserpine River, by that river downwards easterly to the western boundary of portion 327, Crystal Brook, by that boundary and the boundary between Crystal Brook 3 and Crystal Brook 7 on the west and Crystal Brook 4 and Crystal Brook 6 on the east southerly about 15 miles to the Andromache River, by that river upwards westerly about half-a-mile to the old boundary between the Bowen and Mackay Land Agents' Districts, by that boundary passing through Mount Hector south-westerly about 6¾ miles to the Normanby Range, by that range south-easterly to a point due north from Mount Marion; thence by a line south to that mount about 4 miles; on the south by a line bearing west about 12 miles; and on the west by a line north to the point of commencement—exclusive of all alienated lands.

Area: 128,000 acres = 200 sq. miles.

Leases: Number of Goldmining Leases in force, 1; area, 16 acres. Number of Miners' Homestead Leases and Applications in force, 16; area, 22 acres (1912).

Mineral Statistics: *Included in* "Other Goldfields" in *stat. tables and diagram*, Pls. 36, 46, 46a, 47.

Mineral References: Gold (alluvial) 3276, (reef) 4120-4140; Silver, 7494, 7499, 7500; Copper (Azurite) 228, (Copper carbonate) 1940-1945, (Copper Pyrites) 2239, 2256-2264, (Malachite) 6325, (Tetrahedrite) 7774; Tin (Cassiterite), 1168; Iron (Hematite) 4741, 4759, (Ilmenite) 4901, (Iron Pyrites) 5274, 5301-5315, (Ironstone) 5586, 5587, (Magnetite) 6026, (Marcasite) 6509, 6510, (Mispickel) 6761-6766, (Siderite) 7412-7414, (Yellow Ochre) 5936; Other Minerals—Chlorite, 1461; Epidote, 2595; Zircon, 8225.

Geological Note: The country rocks comprise tourmaline porphyry, schists, quartzites, and slates. Granite also occurs in the district. Gold-bearing reefs exist in the altered sedimentary rocks and in the porphyry, and are very large and extensive along their outcrops.

Geological Publications: Reports—Nos. 5 (1899), 48 (1888), 49 (1889), 88 (1893), 181 (1903). *See under* Geol. Surv. Pub. List for title. *See also under* Supplementary Reports List, No. 15, 120.

Warden: Stationed at Bowen; Inspector of Mines: Stationed at Charters Towers.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Normanby Copper Mine, Mt. Perry. *Min.Ref.* Copper (Ore), *see* 2023; Copper Pyrites, 2128; Iron Pyrites, 4989; Tenorite, 7714.

—— Gold Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4298.

—— (Duan) Island, Brit. New Guinea. *Min.Ref.* Cinnabar, *see* 1564; Gold (alluvial), 3421; Iron Pyrites 5473.

—— Range, Normanby Goldfield. *Min.Ref.* Iron Pyrites, *see* 5314; Tourmaline, 7863.

—— Group of Reefs, 40 miles S.S.W. of Cooktown. *Includes* Gilbert, Isabella, Monte Christo, and Norton Reefs. *Min.Ref.* Gold, *see* 3683.

—— Road, nr. Don River, 6 miles S. of Bowen. *Min.Ref.* Gold, *see* 4086.

Normanton—

Situation: *See maps*, Pls. 20, 21. On the S.W. Coast of Cape York Peninsula, 2063 miles (by steamer) N.W. of Brisbane. *Co.* Norman; *Dist.* Burke. *Lat.*, 17° 40′ S.; *Long.*, 141° 04′ E.

Port for the Croydon Goldfield and Stanhills Tinfield. The mineral products for foreign ports, and at times also for interstate ports, are transhipped at Thursday Island.

Harbourage: The town is on the Norman R., and 55 miles from the Gulf of Carpentaria. Up to the town wharves the river is navigable for vessels drawing 6 feet. The entrance has a channel of 6 feet L.W.S. Anchorage inside bar is from 12 feet to 16 feet at L.W.S. Rise and fall of tides average from 8 feet to 13 feet., but there is only one tide in 24 hours.

Population: 838 (Census, 1911).

Rainfall: Yearly average between 1903 and 1907, 38·99 in. Yearly average of wet days between 1903 and 1907, 48.

Mineral References: Ironstone, *see* 5489; Porcellanite, 5661.

Geological Note: The country in and about the town is slightly undulating, and very little above sea-level, the rocks on the surface being of recent formation. At Normanton there is a flowing bore which receives its supply of water from the Cretaceous artesian basin underlying all this part of Queensland.

Geological Publications: Report—No. 62 (1890). *See under* Geol. Surv. Pub. List for title.

Norris's P.A., Paradise Goldfield. *Min.Ref.* Gold, *see* 3617; Iron Pyrites, 5003.

Norseman and Bonanza Leaders, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3821.

North Australian Reef, Charters Towers Goldfield. *Min.Ref.* Calcite, *see* 498; Chalcedony, 1344; Gold, 3962; Gypsum, 4620; Iron Pyrites, 5189.

—— —— Tin Mine, Watsonville. *Min.Ref.* Azurite, *see* 191; Cassiterite, 909; Chalcanthite, 1323; Copperas, 2335; Malachite, 6222; Serpentine, 7382; Steatite, 7684; Tenorite, 7720.

—— Britain Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1052; Mispickel, 6734.

—— —— Mine, Irvinebank. *Min.Ref.* Bismuthinite, *see* 366; Cassiterite, 867.

—— Callandoon Bore. *See under* Artesian Bores. No. 274.

—— Chillagoe (Tartana) Report (Royal Commission on). *See under* Royal Commissions.

—— Cross Reef, Limestone, Palmer Goldfield. *Min.Ref.* Gold, *see* 3676.

——-East Bore. *See under* Artesian Bores. No. 189.

—— Ipswich Bores (no record). *See* Ipswich Coalfield, *under* Coal Bores.

North Ipswich Coal Area, 24 miles (by rail) W.S.W. of Brisbane. *See* Pls. 6, 7, 25. *Includes* Eclipse, Donnybrook, Eastwood, Haighmoor, New, Rothwell Haigh, Tivoli, Waterstown, and Wright's Collieries.

Mineral Reference: Coal, *see* 1737, 1738, 1740, 1742, 1745, 1746, 1751-1753, 1755, 1756, 1758, 1759. *See also* Q.G.M.J., vol. 11, p. 603 (1910).

—— Keppel Island. *See under* Keppel Bay Islands for Geological Note.

—— and Middle Peaks (in gullies between), about 1¼ mile N.W.byW. of Moonmera. *Min.Ref.* Gold (alluvial) *see* 3404.

—— Pine, 17 miles (by rail) N. of Brisbane. *Min.Ref.* Stibnite, *see* 7649.

—— Queensland Collieries Bores. *See under* Coal Bores.

—— —— Concession, Mitchell R. *Min.Ref.* Stibnite, *see* 7633.

—— —— Silver Mg. Co., Montalbion. *Min.Ref.* Anglesite, *see* 25; Galena, 2770; Silver, 7453.

—— Rockhampton Bore. *See under* Artesian Bores. No. 45.

—— Star Copper Mine, Cressbrook Cr., 12 miles N. of Esk. *Min.Ref.* Copper carbonate, *see* 1953; Copper Pyrites, 2275.

—— —— Gold Mine, New Zealand Gully, Cawarral Goldfield. *Min.Ref.* Gold, *see* 4329; Iron Pyrites, 5402.

—— —— Silver Mine, Argentine Silver Field. *Min.Ref.* Silver, *see* 7492.

—— —— Gold Reef, Georgetown, Etheridge. *Min.Ref.* Gold, *see* 3732.

—— —— P.C. Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3751.

North-western Queensland (Geological Notes and Map). G.S.Q.P. 159, pp. 10-15 (1901).

Northampton Downs Bore. *See under* Artesian Bores. No. 367.

Northbrook (A. Beazley's) Lease (179), Star R. Mineral Field. *Min.Ref.* Anglesite, *see* 52; Cerussite, 1275; Galena, 2990; Iron Pyrites, 5285; Minium, 6621; Zinc Blende, 8164.

Northcote. *See maps*, Pls. 8, 9, 22. Hodgkinson Goldfield. *Lat.*, 17° 1′ S.; *Long.*, 145° 16′ E. Antimony discovery about 1877. *Min.Ref.* Cervantite, *see* 1304A, 1305; Copper Pyrites, 2152; Galena, 2761, 2762; Gold, 3754-3761; Iron Pyrites, 5056A-5058; Mispickel, 6684; Stibnite, 7618-7622.

GEOLOGICAL NOTE: The prevailing rocks are slate and greywacke, of Gympie Formation (Permo-Carboniferous), in which there are several quartz reefs carrying both gold and antimony, the latter occurring as large shoots of stibnite. *See* G.S.Q. Pub. No. 92, p. 121.

Northern End Bore. *See under* Artesian Bores. No. 417.

—— Railway, 30 miles S. of Townsville. *Min.Ref.* Marble, *see* 586.

—— Workings, Black Ridge, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3310.

Northumberland Islands, N.E.byE. of St. Lawrence. Centre—about *Lat.* 21° 50′ S., *Long.* 150° 23′ E. *Includes* Duke Group and other islands. *Min.Ref.* Iron Sand, *see* 5479; Limestone, 690; Magnetite, 6050; Marble, 598-601.

Norton Goldfield. *See* Milton Goldfield. Smelting Works: *See under* Smelting Works in Queensland. Reports: *See under* Supplementary Reports, No. 21.

—— Reef, Normanby, S.S.W. of Cooktown. *Min.Ref.* Gold, *see* 3683.

Norwood Artesian Bores. *See under* Artesian Bores. Nos. 137, 382.

Nottingham Bore. *See under* Artesian Bores. No. 368.

Noumeaite. *Syn.* Garnierite. *Compo.*, Hyd. silicate of nickel and magnesium. *Colour*, usually apple green. Dull. Soft. Fragile. *Sp.gr.* = 2·3-2·8. *Contents* (*max.*), Nickel 30 per cent.

6911. ——. In Tunnel, Mt. Cobalt, 7 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.M.

Nova Scotia Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1107; Fluorspar, 2677; Wolfram, 8023.

Nuggets. *See* Gold (nuggets).

Nuggety Gully, Calliope Goldfield. *Min.Ref.* Gold (alluvial), *see* 3380, (nugget) 3444.

—— ——, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

—— ——, Gympie Goldfield. *Min.Ref.* Gold (alluvial), *see* 3414.

—— ——, Green Hills Goldfield. *Min.Ref.* Gold (alluvial), *see* 3213.

—— ——, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

—— ——, Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

—— ——, Mt. Britton Goldfield. *Min.Ref.* Calcite, *see* 518-521; Chlorite, 1462; Gold (nugget), 3442, (reef) 4185-4188; Iron Pyrites, 5329; Ironstone, 5602; Steatite, 7694.

Numalla Co. Warrego Dist. *See map*, Pl. 18.

Nundah, 5 miles (by rail) N. of Brisbane. *Min.Ref.* Coal, *see* 1770, 1771. *See also under* Govt. Ming. Jour., Report 72, *and under* Supplementary Report List, Nos. 126, 132, 146.

GEOLOGICAL NOTE: The rocks in this locality consist of Coal Measures belonging to the Ipswich Formation (Trias-Jura), and contain at least three workable seams of good coal. The gravel deposits immediately above the coal are valuable as road-making material, and below the coal there are beds of first-class fireclay.

—— Coal and Gravel Co.'s Bores. *See under* Coal Bores.

Nundubbermere Run, 13 miles S.W. of Stanthorpe. *Min.Ref.* Cassiterite, *see* 996; Copper carbonate, 1902; Garnet, 3118; Gold, 3841; Mispickel, 6718; Magnetite, 6000.

Nyama Co. Gregory North Dist. *See map*, Pl. 20.

Nymbool (Smith's Cr.) Mines, 28 miles S.E.byS. of Lappa Junction (Chillagoe line). *Min.Ref.* Cassiterite, *see* 1142; Copper (ore), 2036; Copper Pyrites, 2215; Scheelite, 7353; Zinc Blende, 8114. *See also under* Govt. Ming. Jour., Report No. 13.

NOTE: The Smith Cr. Tin Mines and Mill were once extensively operating in this locality. Wolfram deposits occur at the head of the creek at Onion Swamp.

Oak Park Bore. *See under* Artesian Bores. No. 369.

—— —— Stn. (3 miles S.W. of), S.byE. of Einasleigh. *Min.Ref.* Antimony (native), *see* 72A; Barytes, 269A.

Oaks Diggings (Old), S.S.W. of Einasleigh. *Min.Ref.* Gold (alluvial), *see* 3237A.

Oaks Gold and Mineral Field—

SITUATION: *See maps,* Pls. 8, 9. The field is 30 miles (by road) S.byE. of Einasleigh Rail. Stn. (Etheridge line). *Cos.* Percy, Copperfield, and Gilbert; *Dist.* Cook. Centre—about *Lat.* 18° 45′ S., *Long.* 144° 8′ E.

DISCOVERY: Alluvial gold discovered in 1907 near Copperfield River, 7 miles S. of Oaks Out-Station of Carpentaria Downs.

POPULATION: Included in Etheridge Returns.

PROCLAMATION OF FIELD: First (and only one) gazetted, 14th April, 1908, as follows:—Commencing on the left bank of Christmas Hill Creek at the south-west corner of Christmas Hill No. 2 Block, and bounded thence on the west by the west boundary of that block, a line north, and the west boundary of Red Rock No. 4; on the north by the north boundaries of Red Rock No. 4, Rienza, Preston, and Myall Downs East to the Einasleigh River, by that river upwards about twenty miles to the south-east corner of Myall Downs No. 2 Block; on the south by the south boundaries of Myall Downs No. 2, Myall Downs No. 3, Oakview No. 6. and Christmas Hill No. 2 westerly to the point of commencement.

AREA: 396,288 acres (619 3/16 sq. miles).

LEASES: Gold-mining and applications in force 21; area, 111 acres; Miners' Homestead Leases, 135; area, 80 acres.

MINERAL STATISTICS: Gold, included in Etheridge Goldfield.

MINERAL REFERENCES: Gold (alluvial), *see* 3237, (reef) 3794-3797; Silver, 7468; Lead (Cerussite), 1213, 1213A, (Galena) 2811, 2812, (Massicot) 6530A; Copper (Copper Pyrites), 2178; Zinc (Zinc Blende), 8089A; Iron (Iron Pyrites), 5086, (Mispickel) 6706A.

GEOLOGICAL NOTE: The country rock is gneissic schist, with granite in close proximity. The schist is traversed by numerous dykes of quartz-felspar-porphyry, and also by innumerable small quartz veins which have, roughly, a circular strike of about a mile in diameter. The rock between the veins is partly sericitic, and, like the veins, is gold-bearing. *See* G.S.Q. Pub. 234 for details.

GEOLOGICAL PUBLICATIONS: Report—No. 234. *See under* Geol. Surv. Pub. List for title. *Also under* Supplementary Report, No. 123.

WARDEN: Stationed at Georgetown. INSPECTOR OF MINES: Stationed at Croydon.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Oaks Station, Central District. (Report on Gold Find near.) *See under* Govt. Ming. Jour., Report No. 37.

Oaks View, 4 miles N. of Oaks Station. *Min.Ref.* Chalcedony, *see* 1361; Chromite, 1480; Gold (alluvial), 3392, (reef) 4312-4314; Limonite, 5910; Magnesite, 5956; Serpentine, 7391,7392. *See also under* Govt. Ming. Jour., Report No. 37.

GEOLOGICAL NOTE: The country rocks are chiefly quartzites and schists, and the gold-bearing ore deposits, intimately connected with the quartzites, are made up of irregularly formed masses of gossan (altered serpentine) with veinlets of quartz. *See* G.S.Q. Pub. Nos. 199 and 205 for details and maps.

Oaks View and Oaks View Consolidated Mines. *Min.Ref.* Chalcedony, *see* 1361; Gold, 4312-4314; Magnesite, 5956; Serpentine, 7391, 7392.

Oakey Rail. Stn., 19 miles N.W. of Toowoomba. Coal being worked here in the Federal Colliery. *See* Coal, 1626.

Oakey Cr., 16 miles W.S.W. of Cooktown. *Min.Ref.* Coal, *see* 1606.

—— ——. At Lappa Junction Rail. Stn. (Chillagoe line). *Min.Ref.* Cassiterite, *see* 952.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 117.

—— ——. *See also* Oaky Creek.

Oaklands, Por (290), Par. of Jimbour, N. of Dalby. *Min.Ref.* Coal, *see* 1622A.

—— Co. Burke Dist. *See map*, Pl. 20.

Oakley Run Bores. *See under* Artesian Bores. No. 311.

Oakvale Sprngs, Herberton. *See under* Petford.

Oakwood Bores. *See under* Artesian Bores. Nos. 241, 369.

—— Colliery, 6 miles S.S.E. of Bundamba Rail. Stn. *Min.Ref.* Coal, *see* 1743.

Oaky Cr., Bakerville. *Min.Ref.* Hornblende, *see* 4827.

—— —— (Seabrooks), Degilbo. *Min.Ref.* Magnetite, *see* 5981; Turgite, 7887.

—— ——, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1158-1162; Copper Pyrites, 2245; Galena, 2967; Magnetite, 6021; Topaz, 7804; Wolfram, 8032.

—— ——. Heads at Main Coast Range 110 miles N.W.by W. of Maryborough, and flows N.E. into Isis River 32 miles N.W. of Maryborough. *Min.Ref.* Coal, *see* 1815.

—— ——, Palmer Goldfield. *Min.Ref.* Gold, *see* 3688-3690; Ironstone, 5518, 5519; Mispickel, 6675.

—— —— Coalfield, 19 miles (by rail) N.W. of Toowoomba. Mining operations commenced here in 1865. *Min.Ref.* Coal, *see* 1626.

—— ——. *See also* Oakey Creek.

—— and Pleasant Lodes, Alma Cr., S.S.E. of Mt. Morgan. *Min.Ref.* Ilmenite, *see* 4912.

Oberlin Mine, Glen Linedale. *Min.Ref.* Cassiterite, *see* 856.

O'Brien's Cr., nr. Brookland Stn. *Min.Ref.* Beryl, *see* 291; Cassiterite, 970; Topaz, 7791.

—— Mine, Pine Vale Cr., nr. Mackay. *Min.Ref.* Azurite, *see* 231; Hematite, 4759A; Malachite, 6326.

6911A. **Obsidian** Bomb. Circular and somewhat flattened, 1¼ in. by ¾ in., surface pitted. Has glassy fracture, and is black. First recorded occurrence in Queensland. Found by H. P. Leahy, surveyor. *Loc.* Newinga Resumption, between Thallon and Talwood, on Goondiwindi-Thallon Rail. line., nr. southern border. *Par.* Guarardera; *Co.* Belmore. *Ref.* B.D.

6911B. —— ——. W. of the town of Blackbutt in prospecting shaft, 6 feet below the surface. Several were found by a miner, the one examined being circular and somewhat flattened, and about 1 inch in the longest diameter. *Co.* Cavendish. *Dist.* Moreton. *Ref.* B.D.

Occidental Reef, Upper Cape, Cape R. Goldfield. *Min.Ref.* Galena, *see* 2951; Gold, 4060.

Ochres. Antimony, *see* Cervantite, ; brown, *see* Limonite; bismuth, *see* Bismite; molybdic, *see* Molybdite; red, *see* Hematite (*vars.* Red ochre and Reddle) and Minium (lead); tungstic, *see* Tungstite; yellow, *see* Limonite. *See also* notes under Iron Ochre and pigments.

O'Connell Co. Kennedy North Dist. *See map*, Pl. 16.

—— P.C. (620), Gympie Goldfield. *Min.Ref.* Gold, *see* 4466.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4521.

O'Brien Bore. *See under* Artesian Bores. No. 315.

Offham Bore. *See under* Artesian Bores. No. 225.

Officers of the Public Service. *See* List pub. annually. Contains names of all the professional and clerical officers of the Mines Department, with age, date of appointment, salaries, etc.

Official Publications. *See* Publications *under* Department of Mines and under Geological Survey of Queensland.

Ogilvie's Sel., Running Cr., Gigoomgan Stn. *Min.Ref.* Barytes, *see* 286.

Oil in Queensland. *See under* Govt. Ming. Jour., Reports Nos. 53, 78, 89A, 107, 124.

——. Reported to occur in Sandstone. Warooby Bore, at depth of 750 ft. Depth of bore, 1434 ft. 7¾ miles N.E. of Roma, por. 173; *Co.* Waldegrave; *Dist.* Maranoa. *Ref.* Pub. Estates Improv. Board, 11 Apr., 1912.

Oil (natural).

GEOLOGICAL NOTE: No reliable evidence is available to show that mineral oil, as a natural product, is to be found in any part of the State, although there are general features present in some localities which might be indicative of its occurrence. On the eastern side of the Dawson River Valley, south of the Central Railway line, there are disturbed and contorted Palæozoic Coal Measures which are known to contain several coal seams, and probably also kerosene shale. These beds have been enveloped by Mesozoic strata where they extend south near the Western Railway line, and where natural gas has been discovered. *See note under* Natural Gas; *also* Q.G.M.J., vol., 11, p. 390 (Aug., 1910).

Oil-bearing Shale.

MINERAL AND GEOLOGICAL NOTE: This substance is a buff-coloured, resin-bearing sediment of low specific gravity. The lighter varieties, which will float on water, and do not absorb water, contain about 5 per cent. of fixed carbon, and 30 per cent. of volatile carbon. The resinous substance is contained in minute granular particles which appear to be seed spores. Fossil leaves and fragment of fish bones and scales occur in the shale, and with it there are associated fragments of fossil wood and small bands of lignite. The age of the deposits is Cretaceous. The short description of the oil-bearing clays at Duaringa given in the G.S.Q. Pub. No. 155 would apply to all known deposits, but a general examination has not been made to determine their extent or economic value.

Localities where oil-bearing shale has been found include Duaringa, Bowen River Coalfield, Redbank Plains (Ipswich district), Mackay, Toowoomba Range, The Narrows near Gladstone, Casuarina Is. near Rockhampton, and Miriam Vale.

6912. Oil-bearing Shale. Toowoomba, 101 miles (by rail) W.byS. of Brisbane. *Co.* Aubigny; *Dist.* **Darling Downs.** *Analysis:* Moisture = 4·88 per cent.; Vol. Hydro-Carbons = 44·82 per cent.; Fixed Carbon = 1·80 per cent.; Ash = 48·50 per cent. *Ref.* L.B. 3, p. 210 (1893).

6912A.—— ——. Connole's Prickly Pear Sel., at foot of Toowoomba Range, about 4 miles from Toowoomba. *Co.* Aubigny (*ante*). *Analysis:* Moisture = 5·8 per cent.; Vol. matter = 30·0 per cent.; Fixed Carbon = 5·2 per cent.; Ash = 59·0 per cent. *Ref.* L.B. 12, pp. 418, 419 (1910).

6913. —— ——. Bowen River Coalfield, Bowen R., about 50 miles S.W. of Bowen. *Co.* Salisbury; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 4, p. 40 (1879).

6913A.—— ——. Vicinity of Mackay, 658 miles N.N.W. of Brisbane. *Co.* Carlisle; *Dist.* **Kennedy South.** *Analysis:* Moisture =6·9 per cent.; Vol. Hydro. Carbon = 46·5 per cent.; Fixed Carbon = 10·7 per cent.; Ash = 35·9 per cent. *Ref.* O.R. (1909).

6914.—— ——. Duaringa Bore, nr. Duaringa Rail. Stn. (Central line), 66 miles (by rail) W.S.W. of Rockhampton. *Co.* Kimberley; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 159, p. 16 (1901). Analyses show that one sample from a bed several feet thick yielded at the rate of 31 gallons of crude oil to the ton of shale.

6915. —— ——. Redbank Plains, 2½ miles S. of Redbank Rail. Stn., 19½ miles (by rail and road) S.S.E. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.M.

6916.—— ——. The Narrows, 18 miles N.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Yield:* 10½ to 13½ gallons of oil per ton. *Ref.* B.D., and Q.G.M.J., vol. xi, p. 391 (1910).

6916A.——. Murray's Bore, Casuarina Island. *See* notes *under* Casuarina Island.

6916B.—— Baffle Creek, 30 miles N.W. of Bundaberg. *Ref.* B.D.

Oil Bores. *See under* Gas Bores.

O.K. Copper Mine, about 40 miles N.N.W. of Mungana. *See* Pl. 22. *Lat.*, 16° 39′ S.; *Long.*, 144° 22′ E. *Min.Ref.* Copper (ore), *see* 2033c; Kaolin, 5681.

See also under Govt. Ming. Jour., Report 74. *Discovery:* By John Munro, about 10th December, 1902.

DISCOVERY: By John Munro, about 10th December, 1902.

SMELTING WORKS: *See under* separate heading.

O.K. Mine (half-way between the Mitchell R. Gold and Antimony Mines and), N.E.byN. of Mungana. *Min.Ref.* Cinnabar, *see* 1546.

O'Keefe's (E.) Bore. *See under* Artesian Bores. No. 241.

Old Aberdare Seam, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1749.

—— Bowen Crossing, Pioneer R., nr. Mackay. *Min.Ref.* Strontianite, *see* 7665.

—— Cemetery, Gympie. *Min.Ref.* Limestone, *see* 698A.

—— Chowey Mine, Chowey Goldfield. *Min.Ref.* Gold, *see* 3573; Molybdenite, 6820; Molybdite, 6868.

—— Chum Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1108.

—— Copper Mines, 2 miles W. of Texas. *Min.Ref.* Copper, *see* 1843.

—— Cricket Ground, Black Ridge, Clermont. *Min.Ref.* Gold (alluvial), *see* 3313, 3314; Marcasite, 6511.

—— Dee Copper Mine, 3 miles N.E. of Mt. Morgan. *Min.Ref.* Native Copper, *see* 2013; Copper Pyrites, 2314; Malachite, 6374.

—— Diggings, Raglan Goldfield. *Min.Ref.* Gold (alluvial), *see* 3388.

—— —— (2 miles W. of), Raglan Goldfield. *Min.Ref.* Azurite, *see* 249; Cuprite, 2474; Malachite, 6359.

—— Dundee Copper Mines, Dee R., S.S.W. of Mt. Morgan. *Min.Ref.* Epidote, *see* 2607; Copper Pyrites, 2314A.

—— Eastern Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4522.

—— Flat, Yowah Opal Field. *Min.Ref.* Precious Opal, *see* 6964.

—— Four-mile Lead, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3357.

—— Harry Show, Wyandotte. *Min.Ref.* Galena, *see* 2953A; Malachite, 6288B.

Old Homestead Diggings, 46 miles (by rail) W.S.W. of Charters Towers. *Reefs:* Denison's High Bar, Higham, Klasted and Party's, Lind and Party's, Main's, and Whistling Tom's. *Min.Ref.* Copper carbonate, *see* 1915; Galena, 2953; Gold (alluvial), 3273, (reef) 4069-4072; Iron Pyrites, 5272, 5273; Mispickel, 6750; Redruthite, 7297.

—— Identity Mine, Charters Towers Goldfield. *Min.Ref.* Barytes, *see* 273; Gold, 3922; Iron Pyrites, 5190; Zinc Blende, 8127.

—— —— Reef, Millchester, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, Iron Pyrites, Zinc Blende, *see* 3963.

—— Imperial Mine, Charters Towers Goldfield. *Min.Ref.* Gold, *see* 3923; Iron Pyrites, 5191; Zinc Blende, 8128.

—— Man Reef, Four-mile Cr., Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4011A.

—— Mud Springs, 8 miles S.E. of Winton. *Min.Ref.* Barytes, *see* 270; Opal (common), 6975.

—— Mystery Mine, Clermont Goldfield. *Min.Ref.* Gold, *see* 4154.

—— Oak Diggings, S.S.W. of Einasleigh. *Min.Ref.* Gold (alluvial), *see* 3237A.

—— Opal Field Workings, Jundah Opal Field. *Min.Ref.* Precious Opal, *see* 6953.

—— Silver Mine, about 1¼ mile N. of Ravenswood. *Min.Ref.* Cerargyrite, *see* 1183A; Gold, 4015.

—— Township Cr., br. of Llankelly Cr., Coen Goldfield. *Min.Ref.* Gold (alluvial), *see* 3208.

—— Warrior Reef, nr. Charters Towers. *Min.Ref.* Gold, *see* 3964; Selenite, 4643.

—— Welcome Mine, Herberton. *Min.Ref.* Orthoclase, *see* 7046.

—— West Moreton Colliery, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1743A.

—— Wolfram Camp. *See* Wolfram Camp.

O'Leary's Crossing, nr. Curra, 8 miles N.W. of Gympie. *Min.Ref.* Gold, *see* 4544.

Oligoclase. *Compo.*, Silicate of alumina and soda. *Colour*, usually whitish. *Lustre*, Resinous. *H.* = 6-7. *Sp.gr.* = 2·65 2·67.

6917. ——. Dargalong, 7 miles S. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

Olivenite. *Syn.* Olive Copper Ore. *Compo.*, Hyd. Arsenate of Copper. *Colour*, dark green shades. *H.* = 3. *Sp.gr.* = 4·1-4·4.

6917A.——. In gossan in lode. Lancelot Copper Mine, Newellton, 9 miles S.W. of Herberton Rail. Stn. (Cairns line). *Co.* Cardwell; *Dist.* Cook. *Ref.* A.R., p. 385 (1911).

6918. ——. Muldiva, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 52 (1900).

Oliver Twist M.C., Cloncurry. *Min.Ref.* Copper (native), *see* 1975; Cuprite, 2384.

Olivine. *Syn.* Peridot, Chrysolite. *Compo.*, silicate of magnesia and iron. *Colour*, usually olive-green. Vitreous. *H.* = 6·5-7. *Sp.gr.* = 3·27-3·37. Ferruginous, *var.* Hyalosiderite. *See* note below.

Mineral Note : Many occurrences are noted for this mineral, but only in the Toowoomba District has any attention been paid to it as a gemstone. The mineral is to be seen as inclusions in the basalt around Spring Bluff and Picnic Point, and although common and in large pieces, it is seldom that a fragment is found large enough to make a gem of two carats in weight. For trade purposes Olivine is classified as follows :—*Chrysolite* (pale sulphur yellow colour), *Olivine* (lemon or yellowish green), Peridot (pale or dark olive green). Much, if not all, of the olivine on the local market, said to be Queensland stones, are foreign productions.

6919. ——. Ironpot Cr., trib. of Boyne R., 5 miles S.E. of Burrandowan, 38 miles N. of Dalby. *Co.* Boondooma; *Dist.* **Burnett.** *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

6920. ——. *Assoc.with* Tourmaline and Chlorite, in altered rock. *Loc.* Biggenden Gold and Bismuth Mine, No. 1 Cutting, Mt. Biggenden, 4½ miles W. of Biggenden Rail Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. 1 (1890).

6921. ——. *Assoc.with* Felspar, Hornblende, and Quartz, in altered rock. *Loc.* Mt. Biggenden (*ante*). *Ref.* G.S.Q. Pub. 60, p. 1 (1890).

6922. ——. *Assoc.with* Hornblende, in basalt. *Loc.* Endeavour R., Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

6923. ——. As crystals. Lake Eacham, 29 miles S.byW. of Cairns. *Co.* Nares; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

6924. ——. As crystals, in basalt. Russell Goldfield, 15 to 20 miles W.N.W. of Geraldton. *Co.* Nares (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

6925. ——. As crystals, in basalt. Por. 1847, Par. of Rolleston, Pittsworth, 36 miles (by rail) S.W.byS. of Toowoomba. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* L.C.B.

6925A.——. In basalt. Harlaxton, Toowoomba Range, 2 miles N. of Toowoomba. *Co.* Aubigny (*ante*). *Ref.* G.S.Q. Pub. 235 (1911).

6926. —— (crystals). In basalt. Deep Tin Lead, Herberton, 32 miles (by rail) S.W.byS. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

6927. ——. Mt. Razorback, Upper Burdekin, about 60 miles W. of Cardwell. *Co.* Gunnawarra; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 6 (1891).

6927A.——. Wyandotte, 48 miles S.E. of Mt. Surprise Rail. Stn. (Etheridge line). *Co.* Gunnawarra (*ante*). *Ref.* O.R. (1909).

6927B.——. *Assoc.with* Pleonaste, in basalt. *Loc.* Policeman Knob, Policeman Cr., 10 miles N.W.byN. of Anakie Rail. Stn. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 172, p. 7 (1902).

6928. ——. In basalt. Gatton, 61 miles (by rail) W. of Brisbane (Main line). *Co.* Churchill; *Dist.* **Moreton.** *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

6929.——. In basalt. Picnic Point (Toowoomba Range), 3 miles S.E. of Toowoomba. *Co.* Churchill (*ante*). *Ref.* Q.M.

6929A.——. In basalt. One Tree Hill (Toowoomba Range), 3 miles S.E. of Toowoomba (*ante*). *Ref.* G.S.Q. Pub. 235 (1911).

6929B.——. In basalt. Quarry below Spring Bluff Rail. Stn. (Main line), (Toowoomba Range), 91 miles (by rail) W.byS. of Brisbane. *Co.* Churchill; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 235 (1911).

6930. Olivine. As crystals. Tambourine Mountain, 10 miles S.S.E. of Logan Village Rail. Stn., Beaudesert line. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.Q. Pub. 51, p. 2 (1889).

6931. ——. In basalt. Stewart's Cr., from 1 to 3 miles W.N.W. of Stanwell Rail. Stn. (Central line), from 16 to 20 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

6932. ——. *Assoc.with* Copper Pyrites and Orthoclase. *Loc.* Sel. (1822), Filly Flat, Gigoomgan Run, 20 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

6933. ——. *Assoc.with* Magnetite and Felspar, in alluvial deposits. *Loc.* Mekeo (St. Joseph), 64 miles N.N.W. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 31 (1892).

6934. ——. As crystals. Mt. Drew, 85 miles N.N.W. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub 85, p. 16 (1892).

6935. ——. *Assoc.with* Magnetite and Felspar, in alluvial deposits. *Loc.* No. 4 River, vicinity of Mt. Yule, 85 miles N.N.W. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 85, p. 16 (1892).

6936. ——. (?) **Hyalosiderite** (*var.*). Nanango, 47 miles N.N.W. of Kannnagur Rail. Stn., 130 miles (by rail and road) N.W. of Brisbane. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* Q.M. and G.S.M.

Olivines in the Toowoomba Ranges. *See under* Govt. Ming. Jour., Report No. 117.

Ollera Creek Mining Centre, 38 miles N.W.byW. of Townsville (once part of Star R. Mineral Field, now in Townsville Mineral Field). Wolfram discovered in 1899. *Min.Ref.* Wolfram, *see* 8033; *see also under* Govt. Ming. Jour., Reports Nos. 46, 60.

O'Loan and Party's Lease, Return Cr., nr Mt. Garnet. *Min.Ref.* Copper carbonate, *see* 1912; Talc, 7679.

Olsen's Caves, Mt. Etna, 15 miles N.byW. of Rockhampton.

Mineral References: Bat Guano, *see* 4612; Garnet, 3143A; Hematite, 4791; Ironstone, 5622; Limestone, 685; Magnetite, 6045-6046A; Tufa, 751. *See also under* Govt. Ming. Jour., Report No. 30.

Geological Note: The caves are in limestones and shales, and contain numerous deposits of bat guano which may be considered to be of some commercial value, the guano including fossilised fragmentary remains of shells and marsupials' bones. Fossil corals are present in both the limestones and shales, and indicate the rocks to belong to the Devonian System. *See* G.S.Q. Pub. 36 for details.

Omrah Sub-artesian Bore. *See under* Artesian Bores. No. 103.

One Mile Gully, nr. Mt. Leyshon. *Min.Ref.* Anglesite, *see* 42B; Cerussite, 1226C; Gold, 3976C; Galena, 2921C; Massicot, 6537B; Silver, 7480D.

—— —— Opal Workings, Paroo Mineral Field. *Min.Ref.* Opal (precious), *see* 6959.

—— —— Silver Mines, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2227; Galena, 2931-2937; Gold, 4015, 4016; Iron Pyrites, 5258, 5259; Silver, 7485, 7486; Stephanite, 7603; Stibnite, 7643; Zinc Blende, 8151-8154.

One Tree Hill, 2 miles S. of Gladstone. *Min.Ref.* Gold, *see* 4295B; Hematite, 4787A; Manganese-dioxide, 6468; Psilomelane, 7101; Silver, 7527A.

—— —— ——, 3 miles S.E. of Toowoomba. *Min.Ref.* Olivine, *see* 6929A.

Onion Swamp, Wolfram Mines, 4 miles N.N.E. of Nymbool. *Min.Ref.* Wolfram, *see* 8030A.

Onyx. *Var. of* Chalcedony, *which see.*

Oolitic Limestone. *Var. of* Calcite, *which see.*

Ooliman Bore. *See under* Artesian Bores. No. 254.

Oom Paul Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

Oondooroo Co. Gregory North Dist. *See map,* Pl. 20.

—— Lease Bore. *See under* Artesian Bores. No. 370.

Oontoo, 160 miles W.byN. of Thargomindah. *Min.Ref.* Cimolite, *see* 1540.

Oorindi Railway Station Bore. *See under* Artesian Bores. No. 79.

Opal. *Compo.*, Hydrous Silica. *H.* = 5·5-6·5. *Sp.gr.* = 1·9-2·3. *Colour*, white, yellow, red, blue, green, purple, black, etc. *Varieties*, precious, common, black, "matrix," wood, resin, and pitch opal; Floatstone, Hyalite, Siliceous Sinter, Spicular Earth, and Tripolite (diatomaceous earth) are also included as varieties of Hydrous silica. *Gangues*, sandstone, clay, clay ironstone, porcellanite, vesicular lava. *Associated Minerals*, Gypsum, Calcite, and Chalcedony.

Mineral and Geological Note: The opals of Western Queensland (and New South Wales) are unquestionably the finest in the world, and make absolutely perfect gems of their class. They contain the most beautiful of tints, and have an endless variety of colour arrangement or "fire." Many pieces as large as a man's head have been found, and one specimen when discovered is said to have been an unbroken piece 5 ft. long. In such large specimens much of the opal is valueless, only the centre or core being good.

Pieces of precious opal the size of a man's hand are not uncommon, but they are always fractured and mixed with common opal and matrix opal and only fit to cut up into small gems, a perfect gem as large as a pigeon's egg being a rarity.

Recently a market has been created for the brownish-black ironstone matrix containing veinlets of fire opal. This is sometimes called black opal, but is more correctly termed "matrix opal." Some specimens are very pretty when polished, and bring prices almost as high as that of the precious opal itself. Black opal is also a beautiful gemstone, the play of bright purples, blues, greens, and reds, alternating with black, being very attractive in good specimens. It is found near Hungerford, close to the southern boundary of Queensland, and is known as "Lightning Ridge Opal."

Stones of first-class quality, of about 20 carats in weight, are usually worth about £1 per carat, and some special merit will increase their value to £3 per carat, while stones of inferior quality are hardly worth the cost of cutting. The cutting and polishing of first-class opal is carried on in Brisbane, Sydney, and Melbourne, and also in London, but the low-grade opal is sent to Germany to be fashioned, and is then put on the market at a price often less than 1s. per carat.

Specimens of opalised shark's teeth, saurian bones, fish scales, and shells are to be occasionally met with in the opal mines, and sometimes the opal, as a pseudomorph, takes the crystalline form of gypsum, The latter mineral is a common associate of opal, and is known amongst the miners as "Copai."

Most of the opal deposits, so far discovered, are close to the surface, and are in beds of sandstone, clay ironstone, and other sedimentary rocks belonging to the "Desert Sandstone" Formation in the Upper Cretaceous System. Sometimes very beautiful specimens are found in nodules of clay ironstone, embedded in sandstone or clay, and are known as "boulder opal."

Precious opal was once obtained in decomposed trachytic and basaltic rocks at Springsure in Central Queensland, but the deposits were of very limited extent, and the opals, although good, were almost always too small for gem purposes. The Springsure mines have been idle for many years.

An enormous area of country in Western Queensland has been proved to be opal-bearing, but until greater facilities exist for mining and prospecting, there will be no systematic work on these opal fields.

Discovery: The first discovery of opal was at Listowel Downs, on Blackwater Creek, N.E. of Adavale in 1872. In the following year, 1873, it was found on the Bulloo R., Opalton in 1888, Paroo in 1893, and Kynuna 1894. For other localities *see under special heading* "Discoveries."

Statistics: *See stat. tables*, Pls., *and diagram*, 44, 45, 46, 46a, 56.

Statistical Note: In the year 1895 opal of an estimated value of £32,750 was produced, that year eclipsing all previous and later records by a very large amount. In the following year (1896) £23,300 worth of opal was mined. The next year's yield was valued at £10,250, and since then the production of opal on the various fields has been gradually declining, the last year, 1912, showing a value of only £3,000. The total value of opal produced from the years 1890 to 1912 is estimated at £172,195. *See tables*, Pls. 44, 45.

Opal—*continued:*

Opal Fields and Mining Centres (*see* further references under name of field).

Bull's Cr. (nr. Adavale). *See maps,* Pls. 18, 19.
Cunnamulla. (*See* Koroit, Southern Cross, and Yowah Fields.
Duck Cr. (nr. Cunnamulla). *See maps,* Pls. 18, 19.
Emu Cr. (nr. Cunnamulla). *See maps,* Pls. 18, 19.
Eromanga. *See* Keeroongooloo, Kyabra, and Bull's Creek Mines.
Eroungholoa. *See* Keeroongooloo, Kyabra, and Bull's Creek Mines.
Fiery Cross (nr. Cunnamulla). *See maps,* Pls. 18, 19.
Good Man's Flat (nr. Cunnamulla). *See maps,* Pls. 18, 19.
Horse Cr. (nr. Winton). *See maps,* Pls. 20, 21.
Jundah (nr. Longreach). *See maps,* Pls. 18, 19.
Keeroongooloo Run (nr. Charleville). *See maps,* Pls. 18, 19.
Koroit (nr. Cunnamulla). *See maps,* Pls. 18, 19.
Kyabra (nr. Charleville). *See maps,* Pls. 18, 19.
Kynuna (nr. Winton). *See maps,* Pls. 20, 21.
Lushington (nr. Cunnamulla). *See maps,* Pls, 18, 19.
Opalton of Fermoy (nr. Winton). *See maps,* Pls. 18, 19.
Paroo. *See* Duck, Sheep Station and Emu Creeks, and Lushington.
Silsoe (nr. Opalton). *See maps,* Pls. 18, 19.
Southern Cross (nr. Cunnamulla). *See maps,* Pls. 18, 19.
Sheep Station Cr. (nr. Cunnamulla). *See maps,* Pls. 18, 19.
Springsure (nr. Springsure). *See maps,* Pls. 10, 11.
Windsor. *See* Kynuna Field.
Yowah (nr. Cunnamulla). *See maps,* Pls. 18, 19.

Bibliography: *Principal Ref.* Jackson (C.F.V.S.), G.S.Q. Pub. No. 177 (1902). *See* Geol. Surv. List for title.

6936A. **Opal** (Black) with blue, purple, green and red plays of colours. *Loc.* Opalton Opal Field, Opalton Mineral Field, 60 miles S.S.W. of Winton. *Co.* Fermoy; *Dist.* Mitchell. Note: Very small quantities were found many years ago in association with the usual kinds of precious opal.

6936B. —— ——. On Queensland Border, near Hungerford, 100 miles S.W. of Cunnamulla Rail. Stn. (Western line). *Co.* Numalla; *Dist.* **Warrego.**

6963C. —— ——. Colours are black, red, green, and blue, the red predominating. *Loc.* Yowah Opal Field, 63 miles W.byN. of Cunnamulla Rail. Stn. (Western line). *Co.* Wellington; *Dist.* Warrego. *Ref.* B.D.

6937. —— (Precious). In ferruginous matrix. *Loc.* Mondure Stn., 12 miles N.N.W. of Wondai Rail. Stn. (Kilkivan line), 113 miles (by rail and road) S.W. of Maryborough. *Co.* Fitzroy; *Dist.* **Burnett.**

6938. ——. In river drift. Kristy's Flat, Burnett R. *Dist.* Burnett. *Ref.* G.S.M.

6938A. ——. Magic Opal Mine, 30 miles N.W. of Jundah Opal Field, 160 miles S.W.byW. of Longreach Rail Stn. (Central line). *Co.* Farrar; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 177, p. 31 (1902).

6939. ——. Hamilton R., 144 miles S. of Cloncurry. *Co.* Hamilton (*ante*). *Ref.* G.S.M.

6940. ——. Opal Mines on the Kynuna Opal Field, Windsor Mineral Field, 80 miles W.N.W. of Winton Rail. Stn. *Co.* Kynuna; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 177, p. 32 (1902).

6940A. ——. Horse Cr. Opal Field, Opalton Mineral Field, 87 miles S. of Winton. *Co.* Mayne; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 177, p. 2 (1902).

6940B. ——. Mick's Opal Mine, 11 miles W. of Jundah Opal Field, 141 miles S.W. of Longreach Rail. Stn. (Central line). *Co.* Mowarra; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 177, p. 31 (1902).

6940C. ——. Tomkins' Opal Mine, 8 miles W. of Jundah Opal Field, 138 miles S.W. of Longreach Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 177, p. 31 (1902).

6940D. ——. Tommy Dod Opal Mine, 13 miles W. of Jundah Opal Field, 143 miles S.W. of Longreach Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 177, p. 31 (1902).

6941. ——. Bull's Creek Opal Mines, *viâ* Gunnedorah, through Niccavilla Stn., across Grey Ranges, 94 miles (by road) S.W. of Adavale. *Co.* Bulgroo; *Dist.* **Gregory South.** *Ref.* G.S.Q. Pub. 177, p. 21 (1902).

6942. ——. Marble Arch Opal Mine, 7 miles N.E. of Bull's Cr., *viâ* Gunnedorah, etc. (*ante*). *Ref.* G.S.Q. Pub. 177, p. 22 (1902).

6943. ——. Valdare Opal Mine, 12 miles N. of Bull's Creek, *viâ* Gunnedorah (*ante*). *Ref.* G.S.Q. Pub. 177, p. 22 (1902).

6944. ——. In sandstone. *Loc.* Quartpot Cr. Opal Field, 16 miles from Eromanga. *Co.* Gordon; *Dist.* Gregory South. *Ref.* G.S.Q. Pub. 177, p. 24 (1902).

6945. ——. In sandstone band. Mascotte and Friday Mines, Keeroongooloo Run, 56 miles N.W. of Eromanga. *Co.* Kyabra; *Dist.* Gregory South. *Ref.* G.S.Q. Pub. 177, p. 28 (1902), and G.S.M.

6946. ——. In porcellanite. Mat's Hard Mine, Keeroongooloo Run, 30½ miles N.W. of Eromanga. *Co.* Kyabra (*ante*). *Ref.* G.S.Q. Pub. 177, p. 26 (1902), and G.S.M.

6946A.——. Aladdin, Aurora Borealis, Baker and Connell's, Breakfast Cr., Bung Bung, Coleman's Cave, De Lazra's, Exhibition, Gap, Gem, Gladstone, Hammond's, Hausington's, Malone's, Mascotte, McGeorge, Peppen and Webber's, Pitt's, Scanlan, Scotchman, Stanley, Stony Cr., and Union Opal Mines, Keeroongooloo Run, 30 to 48 miles N.W. of Eromanga. *Co.* Kyabra (*ante*). *Ref.* G.S.Q. Pub. 177, pp. 24-30 (1902).

6946B.——. Cunnavalla Opal Mine, 32 miles W. of Eromanga, Kyabra Opal Field. *Co.* Windula; *Dist.* Gregory South. *Ref.* G.S.Q. Pub. 177, p. 24 (1902).

6947. ——. In sandstone. Little Wonder Mine, McGregor's Range, 34 miles W. of Eromanga, Kyabra Opal Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 23 (1902), and G.S.M.

6948. ——. Mulcahy's Opal Mine, 18 miles N.W.byW. of Eromanga, Kyabra Opal Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 24 (1902).

6948A.——. Pinnacles Opal Mine, 28 miles W. of Eromanga, Kyabra Opal Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 24 (1902).

6948C.——. Laman's Opal Mine, 23 miles W.S.W. of Eromanga, Mt. Margaret Run, *Co.* Windula; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 177, p. 24 (1902).

6948D.——. Potts' Opal Mine, 26 miles W.S.W. of Eromanga, Mt. Margaret Run (*ante*). *Ref.* G.S.Q. Pub. 177 (1902).

6949. ——. In vesicular volcanic rock. *Loc.* Rainworth Run, ¾-mile S.W. of Springsure. *Co.* Denison; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 177, p. 33 (1902), and G.S.M.

6950. ——. In boulder matrix. Canmaroo Stn. (Yeulba), 48 miles S.E. of Yeulba Rail. Stn. (Western line), 24 miles S.E.byE. of Surat. *Co.* Elgin; *Dist.* **Maranoa.** *Ref.* G.S.M.

6951. ——. *See* No. 6936A.

6951A.——. Silsoe, 25 miles S.E. of Fermoy. *Co.* Musgrave; *Dist.* **Mitchell.** *Ref.* B.D.

6952. ——. In boulder matrix. Barcoo R., nr. Blackall, 380 miles (by rail) W.byS. of Rockhampton (Central line). *Co.* Tambo; *Dist.* Mitchell. *Ref.* G.S.M.

6953. ——. As bands and veins in clay, and in boulders of fine reddish sandstone, with Gypsum. *Loc.* Old Field, and Black Mine Opal Workings, Jundah Opal Field, **Opalton Mineral Field,** 130 miles S.W. of Longreach Rail. Stn. (Central line). *Co.* Warbreccan; *Dist.* Mitchell. *Ref.* G.S.Q. Pub. 177, pp. 30, 31 (1902).

6953A.——. Dyson's Opal Mine, 5 miles S.E. of Jundah Opal Field, Opalton Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 31 (1902).

6954. ——. Moriarty's Range, **Koroit Opal Field,** 38 miles N.N.W. of Cunnamulla Rail. Stn. (Western line). *Co.* Bando; *Dist.* **Warrego.** *Ref.* G.S.Q. Pub. 177, p. 18 (1902).

6955. ——. Duck Cr. Mines, Yowah Cr., 77 miles N.W.byW. of Cunnamulla Rail. Stn. (Western line), **Paroo Mineral Field.** *Co.* Homeburn; *Dist.* Warrego. *Ref.* G.S.Q. Pub. 177, p. 19 (1902).

6956. ——. Emu Cr. Opal Mines, 4 miles S.E. of Duck Cr., 71 miles N.W. of Cunnamulla Rail. Stn. (Western line), Paroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 20 (1902).

6957. ——. Goodman's Flat, 2½ miles N.W. of Duck Creek Field, 80 miles N.W. of Cunnamulla Rail. Stn., Paroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 20 (1902).

6958. Opal. Lushington Opal Mines, 90 miles N.W.byN. of Cunnamulla Rail. Stn. (Western line), Paroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 21 (1902).

6959. ——. One-mile Opal Workings, E. of Duck Creek Old Field, 76 miles N.W.byW. of Cunnamulla Rail. Stn., Paroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 20 (1902).

6960. ——. Pride of the Hills Opal Mine, 12 miles N.W. of Duck Cr. Field, 89 miles N.W. of Cunnamulla Rail. Stn. (Western line), Paroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 20 (1902).

6961. ——. Sheep Station Creek Opal Workings, 5 miles S.W. of Duck Cr., 81 miles N.W.byW. of Cunnamulla Rail. Stn. (Western line). Paroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 20 (1902).

6961A.——. Listowell Downs Stn., head of Blackwater Cr., trib. of Bulloo R., 65 miles N.E. of Adavale. *Co.* McKinlay; *Dist.* Warrego.

6962. ——. *See* No. 6936B.

6963. ——. Gt. Extended Opal Mine, **Yowah Opal Field,** Cunnamulla Mineral Field. 63 miles W.byN. of Cunnamulla Rail. Stn. (Western line). *Co.* Wellington; *Dist.* Warrego. *Ref.* G.S.Q. Pub. 177, p. 15 (1902).

6964. ——. Old Flat Opal Workings, Yowah Opal Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 18 (1902).

6965. ——. Southern Cross Opal Mine, Yowah Opal Field (*ante*). *Ref.* G.S.Q. Pub. 177, p. 18 (1902).

6966. ——. *See* No. 6936C.

6967. ——. **Fiery Cross Opal Field,** 25 miles N.N.W. of Yowah, 85 miles W.N.W. of Cunnamulla Rail. Stn. (Western line), Paroo Mineral Field. *Co.* Wellington; *Dist.* Warrego. *Ref.* G.S.Q. Pub. 177, p. 19 (1902).

6967A.——. In decomposed volcanic rock. Blackall Range, 50 miles N.N.W. of Brisbane, *viâ* Landsborough. *Co.* March; *Dist.* Wide Bay.

6968. —— (Common). Glenore, 14 miles (by rail) S. of Normanton. *Co.* Norman; *Dist.* Burke. *Ref.* B.D.

6969. ——. As small grains in ferruginous ("Desert") sandstone. *Loc.* Jardine Valley, 222 miles (by rail) S.W.byW. of Townsville, on Gt. Northern line. *Co.* Douglas; *Dist.* Burke. *Ref.* B.D.

6970. ——. *Assoc.with* Siderite and Iron Pyrites. *Loc.* Riverbank Colliery, 1¼ miles S.E. of Howard Rail. Stn. (North Coast line), Burrum Coalfield. *Co.* Bowen; *Dist.* Burnett.

6970A.——. Mondure, about 40 miles S.byE. of Gayndah Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* B.D.

6971. ——. Auburn Falls P.C., Auburn R., Cadarga, 32 miles W.S.W. of Gayndah. *Co.* Newcastle; *Dist.* Burnett.

6972. ——. Dixon's Paddock, 25 miles W. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* Cook. *Ref.* B.O.

6973. ——. *Assoc.with* Cassiterite, in gravel. *Loc.* Severn R., 1 mile N.W. of Ballandean Rail. Stn., 15 miles (by rail and road) S.S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* B.D.

6974. ——. In clay ironstone. In Railway Cutting on Goondiwindi Railway, Glen Road Crossing, 58 miles W. of Inglewood Rail. Stn. (Goondiwindi line), 131 miles (by rail and road) W.byS. of Warwick. *Co.* Marsh; *Dist.* Darling Downs. *Ref.* L.C.B.

6975. ——. Old Mud Springs, 8 miles S.E. of Winton. *Co.* Ayrshire; *Dist.* **Gregory North.** *Ref.* G.S.M.

6976. ——. *Assoc.with* Cairngorm, Opalized Wood, and Cassiterite, in alluvial deposits under decomposed basalt. *Loc.* Brewery Hill, Nigger Cr., 3 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* B.D.

6977. ——. Mt. Macedon Range, 75 miles S.W.byW. of Bowen. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

6978. ——. Mt. Toussaint, 45 miles S.W. of Bowen. *Co.* Salisbury (*ante*). *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

6979. ——. Pelican Cr., br. of Bowen R., 50 miles S.W. of Bowen. *Co.* Salisbury (*ante*). *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

6980. ——. Cape Hillsborough, 18 miles N.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 53, p. 9 (1889).

6980A.——. Glendon Run, nr. Burdekin Falls, about 82 miles S.W.byW. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* O.R.

6981. ——. Mt. Minerva, 12 miles N. of Springsure Rail. Stn. (Central line), 218 miles (by rail and road) W.S.W. of Rockhampton. *Co.* Denison; *Dist.* **Leichhardt.** *Ref.* G.S.M.

6982. —— (resin). Near railway line, Nogoa R., nr. Emerald Rail. Stn. (Central line), 166 miles W. of Rockhampton. *Co.* Denison (*ante*). *Ref.* G.S.M.

6982A.——. Grosvenor Downs, about 60 miles N.N.E. of Clermont. *Co.* Grosvenor; *Dist.* Leichhardt. *Ref.* O.R.

6983. ——. On surface of basalt. Near Blackwater Rail. Stn. (Central line), 118 miles (by rail) W.byS. of Rockhampton. *Co.* Humbolt; *Dist.* Leichhardt. *Ref.* B.D.

6984. —— (pitch). Hills E. of Mt. Britton Township, 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 61 (1887).

6985. —— (wood). *Assoc.with* Fossil Wood, in slate and sandstone. *Loc.* Of general occurrence on the Dawson, Mackenzie, Isaacs, and Nogoa Rivers in the Leichhardt District. *Ref.* B.D.

6986. ——. Muttaburra, 65 miles N.byE. of Longreach Rail. Stn., or 70 miles N.W. of Barcaldine Rail. Stn. (Central line). *Co.* Cumberland; *Dist.* **Mitchell.** *Ref.* L.B. 3, p. 479 (1894).

6987. —— (black). *Assoc.with* Sandstone. *Loc.* Buderim Mt., 7 miles E. of Woombye Rail. Stn. (North Coast line), 69 miles (by rail and road) N. of Brisbane. *Co.* Canning; *Dist.* Moreton. *Ref.* B.D.

6988. ——. Glasshouse Mountains, 2 miles W. of Glass Mountain Rail. Stn., 46 miles (by rail and road) N.byW. of Brisbane. *Co.* Canning (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 65 (1887).

6989. ——. Por. (286), Brassall, Pine Mountain Rail. Stn., 7 miles (by rail) N.N.W. of Ipswich, and 31 miles (by rail) W.S.W. of Brisbane. *Co.* Churchill; *Dist.* Moreton. *Ref.* L.C.B.

6990. —— (resin). Mt. Sylvia, 12 miles S. of Gatton Rail. Stn. (Main line), 73 miles (by rail and road) W. of Brisbane. *Co.* Churchill (*ante*). *Ref.* L.C.B.

6991. ——. Near Norman Park, 2 miles E. of Brisbane Rail. Stn. *Co.* Stanley; *Dist.* Moreton. *Ref.* Q.M.

6992. ——. *Assoc.with* Chalcedony and Quartz, in ferruginous clay. *Loc.* Railway Cutting, 400 yards N. of Tingalpa Cr., nr. Hemmant Rail. Stn., about 10 miles E.byN. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* B.D.

6993. ——. In gravel. Christmas Cr., nr. Beaudesert Rail. Stn. (South Coast line), 47 miles (by rail) S.byE. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.M.

6994. ——. Darlington Reserve, nr. Beaudesert Rail. Stn. (South Coast line) (*ante*). *Ref.* G.S.M.

6995. —— (resin). Tamborine Mountains, 10 miles S.S.E. of Logan Village Rail. Stn. (Beaudesert line). *Co.* Ward; *Dist.* Moreton. *Ref.* Q.M.

6995A.—— (pitch). As small veins in basalt. *Loc.* Point Danger, Tweed Heads, 69 miles (by rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* B.D.

6996. ——. *Assoc.with* Tripolite, in basalt. *Loc.* Head of Nerang Cr., Beach Range, Spur of Macpherson Range, nr. border of N.S. Wales, 56 miles S.byE. of Brisbane. *Co.* Ward (*ante*). *Ref.* B.D.

6997. ——. Dinner Cr., trib. of Lion Cr., 5 miles N.W.byN. of Stanwell Rail. Stn., 21 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

6998. ——. Mt. Coffin, Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* G.S.M.

6998A.—— (white). *Assoc.with* Carnelian, Agate, and Quartz crystals, in decomposed basalt. *Loc.* 2½ miles N.W. of Cordalba Rail. Stn. (North Coast line), 50½ miles (by rail and road) N.W. of Maryborough. *Co.* Cook; *Dist.* Wide Bay. *Ref.* B.D.

6999. ——. North of Cooran Rail. Stn. (North Coast line), 16 miles S. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.M.

7000. —— (Jaspopal). Cave Cr., nr. Scotland Hills, about 5 miles S. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* **Burnett.** *Ref.* L.C.B.

7001. ——. Por. (1098), Walla, 5 miles S.S.W. of Gin Gin Rail. Stn. (Bundaberg-Mt. Perry line), 34 miles (by rail and road) W. of Bundaberg. *Co.* Bowen; *Dist.* Wide Bay. *Ref.* L.C.B.

7002. —— (Wood). Boondooma Stn., Burnett R., 40 miles W. of Wondai Rail. Stn. (Kilkivan line), 141 miles S.W.byW. of Maryborough. *Co.* Boondooma; *Dist.* Burnett. *Ref.* B.D.

7003. Opal. In Tunnel. Just-in-Time Claim, Terraces, Russell Goldfield, 22 miles W.N.W. of Geraldton. *Co.* Nares; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 89, p. 2 (1893).

7004. ——. Near Miles-Taroom Road, 231 miles (by rail) W.N.W. of Brisbane. *Co.* Bulwer; *Dist.* **Darling Downs.**

7005. ——. Chinchilla Head Stn., 7 miles S.W. of Chinchilla Rail. Stn. (Western line). *Co.* Lytton; *Dist.* Darling Downs. *Ref.* P.R.S.Q., vol. 4, p. 64 (1887).

7006. ——. *Assoc.with* Common Opal, Cairngorm, and Cassiterite, in alluvial deposits, under basalt. *Loc.* Brewery Hill, Nigger Cr., br. of Wild R., 3 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* B.D.

7007. ——. Deep Tin Lead, Herberton, 82 miles (by rail) S.W.byS. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

7008. ——. Between Herberton and Bradlaugh Gully, Herberton. *Ref.* G.S.Q. Pub. 115 (1896).

7009. ——. Flat between Cooper's Cr. and Hail Cr., about 60 miles S.byW. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 54, p. 4 (1889).

7010. ——. Near Emerald, 165 miles (by rail) W. of Rockhampton (Central line). *Co.* Denison; *Dist.* Leichhardt. *Ref.* G.S.M.

——. *Var.* Diatomaceous Earth. *Syn.* Infusorial Earth, Keiselguhr. *See* Tripolite.

—— **Floatstone** (*Var.*). *Compo.*, Amorphous Silica. *Colour*, dull white. *Texture*, soft, earthy, rough. Floats in water.

7011. —— ——. Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.M.

—— **Hyalite** (*Var.*). (*Syn.* Müller's Glass). Colourless. Glassy. Occurs in pisolitic, botryoidal, and stalactitic masses in vesicular laves.

7012. —— ——. In basalt. Cumkillenbar Run, 7 miles N.E. of Dalby Rail. Stn. (Western line). *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* P.R.S.Q., vol. 4, p. 65 (1887).

7013. —— ——. Square Top Mt., 17 miles N.W. of Dalby Rail. Stn. *Co.* Aubigny (*ante*).

7014. —— ——. *Assoc.with* Gold, in trachyte. *Loc.* Minerva Cr., Springsure, 206 miles (by rail) W.S.W. of Rockhampton (Central line). *Co.* Denison; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 103, pp. 9, 10 (1895).

7015. —— ——. Mt. Boorambool, 3 miles W.byN. of Springsure Rail. Stn. *Co.* Denison (*ante*). *Ref.* G.S.Q. Pub. 94, p. 8 (1893).

7016. —— ——. Dawson River, Taroom, 90 miles N.byW. of Miles Rail. Stn. (Western line), 321 miles (by rail and road) N.W. of Brisbane. *Co.* Fortescue; *Dist.* Leichhardt.

7017. —— ——. In decomposed basalt. Nr. Balcomba Stn., Mackenzie R., 24 miles N. of Duaringa Rail. Stn. (Central line), 90 miles (by rail and road) W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* B.D.

7018. —— ——. Por. 126v, Whitestone, between Deort's Glen and Ribstone Gully, 20 miles S. of Gatton Rail. Stn. (Main line). *Co.* Churchill; *Dist.* **Moreton.** *Ref.* L.C.B.

7019. —— ——. 12 miles from Mt. Zahel, 30 miles from Gatton Rail. Stn. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.M.

7020. —— ——. Kroombit, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* L.C.B.

7021. —— ——. North of Cooran Rail. Stn. (North Coast line), 16 miles S.byE. of Gympie. *Co.* March; *Dist.* **Wide Bay.** *Ref.* G.S.M., and A.R.D.M. pp. 7, 8 (1892).

7022. —— ——. *Assoc.with* Opal (common), in basalt. *Loc.* On ridge, Six-mile Cr., Cootharaba and Noosa Waters, 24 miles E. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 94, p. 7 (1893).

—— **Siliceous Sinter** (*Var.*). *Syn.* Fiorite, Geyserite. Occurs as light irregular masses around hot springs.

7023. —— ——. Innot Hot Springs, Nettle's Cr., br. of Herbert R., nr. Herberton, 8 miles W. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* B.D.

7023A. —— ——. Dobu Island, 256 miles E. of Port Moresby, **Brit. New Guinea.** *Analysis:* Silica = 87·16 per cent., Alumina = 2·20, Iron Protoxide = 2·66, Magnesia = trace, Lime = trace, Potash and Soda = 0·21, Loss on ignition = 7·87, Sulphur = trace. *Ref.* G.S.Q. Pub. 85, p. 32 (1892).

—— ——. *See also under* Quartz.

7024. —— **Spicular Earth** (*Var.*). A Tripolite made up of the spiculæ of sponges. In large quantities, extending over several acres of ground. *Loc. Por.* 10v, *Par.* Clarendon, *Co.* Cavendish, *Dist.* West Moreton.

—— **Tripolite** (*var.*). *Syn* Infusorial Earth, Diatomaceous Earth. Kieselguhr. A light, porous form of hydrous silica formed from the microscopic skeletons of diatoms or of sponge spiculæ.

7024A.—— ——. As a large deposit. On Tarong Estate, between Pim Pim bridge and Middle Creeks, running into Baramba Cr., trib. of Burnett R., about 60 miles N.W. of Cooyar, and about 20 miles S.W. of Nanango. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* O.R.

7025. —— ——. *Loc.* Occurs as a bed about 30 feet thick in well 2 miles W. of Spring Cr. Stn., 35 miles S. of Junction Cr. Telegraph Stn., Etheridge Gold and Mineral Field. *Co.* Copperfield; *Dist.* **Cook.** *Ref.* B.D.

7026. —— ——. Almaden, 121 miles (by rail) W.S.W. of Cairns, on Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook.

7027. —— ——. Atherton, 68 miles (by rail) S.W. of Cairns (on Cairns-Herberton line), Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.M.

7028. —— ——. Killarney, 28 miles (by rail) E.S.E. of Warwick. *Co.* Merivale; *Dist.* **Darling Downs.**. *Ref.* Q.M.

7028A.—— ——. In Cliff 20 ft. or 30 ft. high. *Loc.* Emu Cr., 6 miles above Killarney Rail. line. *Co.* Merivale (*ante*).

7029. —— ——. Warwick, 169 miles (by rail) S.W. from Brisbane. *Co.* Merivale (*ante*). *Ref.* Q.M.

7029A.—— ——. In bed 3 ft. thick. Buff coloured. *Loc.* Creek near Homestead, Planet Downs, 18 miles E.S.E. of Rolleston, about 60 miles S.byE. of Comet Rail. Stn. (Central line). *Co.* Consuello; *Dist.* **Leichhardt.** *Analysis:* Moisture at 100° C. 7·8, loss on ignition 6·9, Silica (S_1O_2) 71·6, Alumina (Al_2O_3) 6·0, Iron Oxide (Fe_2O_3) 4·2, Lime (CaO) 0·3, Magnesia (MgO) 1·5—98·3 per cent. NOTE: Absorbs 130 per cent. of its own weight of water. *Ref.* G.S.M. and A.R., p. 237 (1910).

7029B.—— —— (white). No. 2 Well nr. Homestead, Planet Downs (*ante*). *Analysis:* Moisture at 100° C. 7·0, loss on ignition 6·8, Silica (S_1O_2) 77·9, Alumina (Al_2O_3) 4·5, Iron Oxide (Fe_2O_3) 1·7, Lime (CaO) 0·3, Magnesia (MgO) 1·7—99·9 per cent. Splits up into fragments when immersed in water. *Ref.* A.R., p. 237 (1910).

7030. —— ——. Woodbine, *viâ* Gatton, 61 miles (by rail) W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Analysis:* Silica (insoluble) = 76·0, Silica (soluble) = 7·8, Alumina = 5·1, Iron = trace, Magnesia = 0·6, Lime = nil, Loss at 115° C. = 5·5, further loss at red heat = 5·8—100·8 per cent *Absorption test:* Moisture and loss on ignition = 12·1, absorption by original sample = 82·7, absorptioned by calcined = 90·4 per cent. *Ref.* A.R., pp. 119, 138 (1907).

7030A.—— ——, in basalt country. Spur off Little Liverpool Range, 5 miles W. of Rosewood Rail. Stn. *Co.* Churchill; *Dist.* Moreton. *Ref.* B.D.

7030B.—— ——. *Loc.* Swan Creek, at head of Hellhole Coal Seam, 8½ miles S.W. of Helidon. *Co.* Churchill (*ante*).

7031. —— ——. Sel. (31), Meerchaum Mountain, Pine Cr., 14 miles E.S.E. of Beaudesert Rail. Stn. (South Coast line), 61 miles (by rail and road) S.E.byS. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Analysis:* Moisture and traces of organic matter = 10·31, Oxide of Iron and traces of alumina and lime = 0·59, Silica = 89·10 per cent. *Ref.* G.S.Q. Pub. 51, p. 3 (1889).

7032. —— ——. Vicinity of Canungra Cr., 10 miles E. of Beaudesert Rail. Stn. *Co.* Ward (*ante*). *Ref.* Q'land Nat. (1908).

7033. —— ——. Ten ft. thick, below basalt, above Trias-Jura Sandstone. *Loc.* Nr. head of Nerang Cr., E. side of Beach Range, spur of Macpherson Range, nr. border of N.S.W., 56 miles S.byE. of Brisbane. *Co.* Ward (*ante*). *Analysis:* Silica = 86·0 per cent.; Iron and Alumina = 5·2 per cent.; Lime = 0·5 per cent.; Moisture at 10°C. = 4·6 per cent.; Loss on ignition = 4·1 per cent. *Absorption test:* Moisture and loss of ignition = 25·8 per cent.; H_2O absorbed by sample before calcination = 55·2 per cent.; H_2O absorbed by sample after calcination = 96·7 per cent. *Ref.* A.R., p. 114 (1907).

7033A.—— ——. Horse Pocket Spur, E. of Beechmont, about 9 miles S.W. of Nerang, and 18 miles E.S.E of Beaudesert. *Co.* Ward (*ante*). *Ref.* O.R.

7033B.—— ——. On Govt. Reserve 362, Par. of Numinbah, about 10 miles S.W. of Nerang, and 17 miles E.S.E. of Beaudesert. *Co.* Ward (*ante*). *Ref.* O.R.

Opal Fields and Centres. *See* Fields *under* Opal.

Opal and Opal Mining in Western Queensland (Notes on). By J. B. Hickie. Ann. Rep. Mines Dept., 1895 (1896).

Opalton Mineral Field—

Situation: *See maps,* Pls. 18, 19, 20, 21. From 60 to 87 miles S.S.W. of Winton, and 96 miles W.byN. of Longreach Rail. Stns. *Cos.* Ayrshire, Binberrie, Brighton, Elderslie, Farrar, Mayne, Mowarra, Rosebrook, and Woodstock; *Dist.* Gregory North. *Cos.* Fermony, Musgrave, Vergemont and Warbreccan; *Dist.* Mitchell. *Lat.*, 23° to 25° S.; *Long.*, 142° to 144° E.

Population: Estimated at under 20.

Proclamation of Field: First (and only one) gazetted, 12th December, 1896, as follows:—Commencing at Jundah, on the left bank of the Thomson River, and bounded thence on the east by the Thomson River upwards to a point south of Vergemont Block No. 3; thence by a line north along the eastern boundaries of Vergemont No. 3, Alfred Downs, and Alfred Downs No. 9, the south-east and north-east boundaries of Archervale, the north-east boundary of Silsoe No. 4, the south-east and north-east boundaries of Silsoe No. 3, the south-east and north-east boundaries of Kurleea Kurleea Nos. 1 and 2, the eastern and northern boundaries of Bladensburg No. 10; on the north by the range forming the northern watershed of Vergemont Creek westerly and southerly to the east corner of Kell No. 3, by the north-east boundaries of Kell No. 3 and Cork No. 10, by the north-west boundaries of Cork Nos. 10 and 9, by the north-east boundaries of Cork No. 1, Cadell No. 1, the north-east and north-west boundaries of Cadell No. 2, and north-east boundary of Middleton No. 1; on the west by the north-west boundaries of Middleton No. 1, Brighton Downs No. 10, the south-west boundaries of Brighton Downs No. 10, the north-west, south-west, and south-east boundaries of Brighton Downs No. 8, the south-west boundaries of Cork No. 5, Kerry South, Cork No. 6, Killarney No. 1, Killarney No. 2 North, Killarney No. 2, and part of the south-west boundary of Killarney No. 2 South, the south-east and part of the south-west boundary of Snow, the west boundaries of Caulfield, Blackrock No. 2, Elvo No. 2, and Elvo No. 6, part of the north and west boundaries of Eden Valley, the north-west boundary of Laura, part of the north boundary of Curran, the west boundaries of Curran, Liverpool, and Complete, the south-west boundaries of Complete, Merabooka, Wombah No. 1, Henry Downs, Esmeralda West, Esmeralda, Cabul, Havre, and Gleg Clare; and on the south by the north-west and north boundaries of Centum, the north boundaries of Esmeralda Plains, Cashmere No. 1, Manilla No. 2, Tryeta No. 2, Carella No. 3, and Haughton Vale No. 1 to the Thomson River; and again on the east by that river upwards to Jundah, the point of commencement.

Area: 9,132,800 acres (14,270 sq. miles).

Principal Mining Centres: Jundah Opal Field, Opalton or Fermoy Opal Field, Horse Cr. Opal Mines, *which see.*

Mineral Statistics: Opal, *see tables,* Pls. 44, 46, 46a.

Mineral References: Opal (precious), *see* 6936a, 6940a, 6953, 6953a; Topaz, 7796; Gypsum, 4617.

Geological Note: The rocks comprise "Desert Sandstone" Formation resting on sandstones, etc., belonging to the "Rolling Downs" Formation. The opal occurs in the Desert Sandstone, the deposits being generally in a soft sandstone above a clay bottom, and sometimes in a ferruginous pipe.

Geological Publications: Report—No. 177 (1902). *See under* Geol. Surv. List for details.

Warden: Stationed at Longreach or Winton. Inspector of Mines: Stationed at Rockhampton.

Opalton (Fermoy) Opal Field. Within the Opalton Mineral Field, S.S.W. of Winton. Centre about *Lat.* 23° 15′ S.; Long. 142° 45′ E. Precious opal was discovered here in 1888. *Includes* Little Wonder, Brilliant, Bald Knob, and Conway's Opal Mines. *Min.Ref.* Gypsum, *see* 4618; Opal (black, precious), 6951; Topaz, 7796.

Opera Cr., 4 miles N. of Zillmanton Rail. Stn. (Chillagoe line). *Min.Ref.* Azurite, *see* 197; Cerussite, 1206, 1207; Chrysocolla, 1519; Clay, 1569; Cuprite, 2438; Fluorspar, 2665; Galena, 2805; Garnet, 3110; Ironstone, 5530; Malachite, 6235, 6236.

Ophir Block (Iguana Reef), Croydon Goldfield. *Min.Ref.* Galena, *see* 2707; Gold, 3491; Iron Pyrites, 4939.

Ora Cr., Gympie Goldfield. *Min.Ref.* Gold (alluvial), *see* 3415.

—— Reef, 7½ miles N. of Gympie. *Min.Ref.* Gold, *see* 4545.

Orchid and Orchid 1 N. Mines, Eungella Goldfield. *Min.Ref.* Copper Pyrites, *see* 2253; Gold, 4105, 4106; Malachite, 6322; Tile Ore, 2567.

Ord (California Cr.) Rail. Stn. (Mt. Garnet line, br. of Chillagoe line). *Lat.*, 17° 24′ S.; *Long.*, 145° E. *Railway Base* for California Cr. Tin Mines. *Min.Ref.* Fluorspar, *see* 2665B; Manganese-dioxide, 6412; Mispickel, 6704.

Ore-buyers—*List of, in Queensland, &c.*:—

Name.	Address.	Class of Ores chiefly dealt with.
Southern Division—		
A. Chandler	Stanthorpe...	Tin
G. Dodds...	Stanthorpe...	Tin
M. Allison	Stanthorpe...	Tin
W. Burbridge	Gympie	Various gold ores (small parcels)
Griffiths Bros.	Gympie	Various gold ores (small parcels)
Central Division—		
*Queensland Copper Co. (Smelting Works)	Mount Perry	Copper, copper-gold ores, and concentrates
* Electrolytic Refining and Smelting Co. (office, Bligh-street, Sydney; works, Port Kembla, N.S.W.	Mackay, Gladstone, Maryborough, and Charters Towers (agencies)	Copper, copper-gold, and other ores Copper, copper-gold, and other ores
Charters Towers, Ravenswood Divisions—		
*Sulphide Corporation (smelting works, Cockle Creek, N.S.W.)	Charters Towers (agency)	Silver, lead, gold ores and concentrates
Graham and Matheson, Ltd.	Charters Towers (and Ravenswood agency)	
*Queensland Copper Co. (works, Mount Perry)	Charters Towers (agency)	Copper-gold ores, gold concentrates, and copper ores
*Electrolytic Refining and Smelting Co.	Charters Towers (agency)	Copper-gold, gold concentrates, and other ores
Cloncurry Division—		
Graham and Matheson, Ltd.	Cloncurry (agency) ...	Copper and other ores
*English and Australian Copper Co.	Waratah, N.S.W. ...	Copper
Herberton-Chillagoe Division		
Irvinebank Mining Co.	Irvinebank. Agencies:—Kooboora, Ora, Wolfram, Mount Carbine, Hot Springs, Lancewood, Truxillo, Molloy, Gurrumba	Wolfram, Molybdenite, tin, silver, bismuth, lead, copper
W. and J. Lempriere (Sydney and Melbourne)	Herberton (agency); agencies at similar centres to Irvinebank Mining Co. above, also at Cooktown	Tin and other ores
Blackwell and Sons (Liverpool)	Wolfram Camp (agency)	Wolfram and copper ores
* The Chillagoe Company, Ltd.	Chillagoe	Copper, silver, lead, gold
Mount Molloy Mines (Smelting Works)	Mount Molloy	Copper
Croydon and Etheridge Division—		
* Sulphide Corporation.	Charters Towers (agency)	Silver-lead ores and gold concentrates
Sydney—		
Lohmann & Co.	7-11 Bridge Street, Sydney Charters Towers agency (Bray and Oaks)	All ores, concentrates, mattes, &c.
Melbourne—		
Australian Metal Co.	P.O. Box 221	All ores, includ. Tantalite, Vanadium, Uranium, and Wolfram

*Open to take ores from all districts. Write for Tariffs.

Ore-buying tariffs of Smelting Works. *See* Tariffs of Smelting Works.

Ore and Govatt's Bore. *See under* Artesian Bores. No. 234.

O'Regan's (D. C.) Bore. *See under* Artesian Bores. No. 154.

Orient Camp, Cumming's Cr., S.S.W. of Stannary Hills Rail. Stn. (Chillagoe Br. line). *Min.Ref.* Galena, *see* 2773A.

—— P.C., Lucky Downs Diggings. *Min.Ref.* Gold, *see* 3879A.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4523.

—— Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1109; Malachite, 6283; Talc, 7677.

Oriental Amethyst, Aquamarine, Cat's Eye, Chrysoberyl, Moonstone, and Peridot. *See* Sapphire, *under* Corundum. *Min.Ref.* 2339-2364.

Oriental 1 N. and Glanmire Mine, Gympie Goldfield. *Min.Ref.* Gold, *see* 4467.

—— Reef, Twelve-mile, Croydon Goldfield. *Min.Ref.* Galena, *see* 2711A; Gold, 3554; Iron Pyrites, 4964.

Orionio (Tate) River, Brit. New Guinea. *Min.Ref.* Lignite, *see* 1831.

Orion Downs Run, 20 miles S.E. of Springsure. *Min.Ref.* Coal, *see* 1676A.

Ornamental (Decorative) Minerals. *See also* Gemstones.

See under name of mineral for details.

Agate (banded). *See under* Chalcedony.
Asteria corundum. *See under* Corundum.
Alabaster (fibrous, silky). *See under* Gypsum.
Carnelian (red). *See under* Chalcedony.
Chalcedony varieties.
Chrysocolla (green).
Chrysoprase (green). *See under* Chalcedony.
Fluorspar (green, etc.).
Grass-stone. *See* Sagenite.
Jasper varieties.
Limestone. *See* Marble.
Lydianstone (black). *See under* Jasper.
Malachite (green).
Marble (white, blue, pink, grey, black, green, etc.). *See under* Calcite.
Onyx (banded). *See under* Chalcedony.
Opal in matrix. *See under* Opal.
Oriental moonstone. *See under* Corundum.
Prase (green). *See under* Chalcedony.
Rose quartz. *See under* Quartz.
Rhodochrosite (pink).
Rhodonite (pink).
Sagenite (hair lines in quartz).
Sard (red). *See under* Chalcedony.
Satin Spar. *See under* Gypsum.
Semi-Opal. *See under* Opal.
Turquoise (greenish blue).
Wood Opal. *See under* Opal.

Orphan M.L. (667), Cloncurry. *Min.Ref.* Malachite, *see* 6165; Redruthite, 7257.

Orrery Co. Warrego Dist. *See map*, Pl. 18.

Orthoclase. *Syn.* Potash Felspar. *Compo.*, Silicate of alumina and potash. *Colour*, usually whitish. *Lustre*, Vitreous. *H.* = 6 6·5. *Sp.gr.* = 2·5-2·62. *Contents* (*max.*), Potash 17 per cent.

7034. ——. *Assoc.with* Biotite and Hornblende, in granite. *Loc.* Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 43, p. 1 (1887).

7035. ——. *Assoc.with* Cassiterite and Tourmaline, in quartz and talc. *Loc.* Owen and Davidson's Tin Lease, Mt. Amos, 20 miles S.S.E. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 35, p. 15 (1887).

7036. ——. *Assoc.with* Hornblende, in syenitic rock. *Loc.* Mt. Browning, nr. Mt. Amos, 20 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 8 (1891).

7037. ——. In granite. Mt. Hartley, about 4 miles E. of Rossville, 26 miles S.S.E. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 7 (1891).

7038. ——. *Assoc.with* Gold, Biotite, and Quartz, in pegmatite. *Loc.* Golden Treasure Mine, 2 miles W. of Tate Telegraph Stn., Tate R., 34 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 4 (1897).

7039. —— (crystals), in decomposed rock. Telegraph Line, Newcastle Range, 8 miles E. of Georgetown. *Co.* Gilbert; *Dist.* Cook. *Ref.* B.D.

7040. ——. *Assoc.with* Copper Pyrites, Cassiterite, Mispickel, in quartz crystals. *Loc.* Gt. Western Tin Mine, Watsonville, 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 13, p. 27 (1883).

7041. ——. *Assoc.with* Cassiterite. *Loc.* Pinnacle Tin Lease, Emu Cr., 12 miles S.E.byE. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 67 (1887).

7042. —— (crystals). Ballandean, 14 miles (by rail) S.S.W. of Stanthorpe, on Main line. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* P.R.S.Q., vol. 4, p. 67 (1887).

7043. —— (crystals). *Assoc.with* Quartz. *Loc.* Railway Cutting, S. of Stanthorpe Rail. Stn. *Co.* Bentinck (*ante*). *Ref.* G.S.M.

7044. ——. *Assoc.with* Copper Pyrites, Mispickel, Cassiterite, Wolfram, Zinc Blende, Calcite, and Chlorite. *Loc.* Sundown Copper Mine, Sundown Cr., Severn R., 12 miles S.W. of Ballandean Rail. Stn. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 191, p. 22 (1904), G.S.M., and B.D.

7045. —— (pink crystals). *Assoc.with* Cassiterite, Mispickel, Steatite, Chlorite, Biotite, and Hornblende, in lode. *Loc.* Gt. Northern Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns-Herberton line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, pp. 62, 67 (1900).

7046. ——. Old Welcome Mine, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 62 (1900).

7047. ——. *Assoc.with* Cassiterite, Wolfram, Steatite, Chlorite, and Serpentine, in quarz lode. *Loc.* Soggaorth Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 6 (1883), and P.R.S.Q., vol. 4, p. 59 (1887).

7048. ——. Magnetic Is., Cleveland Bay, 5½ miles N. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 75, p. 3 (1892).

7049. ——. *Assoc.with* Gold, Copper Pyrites, Chalcanthite, and Calcite, in quartz. *Loc.* Red Streak Reef, Yatton Goldfield, 21 miles S.W. of St. Lawrence. *Co.* Killarney; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 39, p. 7 (1887).

7050. ——. *Assoc.with* Biotite and Hornblende, in granite. *Loc.* Norton (Milton) Goldfield, 23 miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 21, p. 5 (1885).

7051. —— (crystals). Dinner Cr., 5 miles N.W.byN. of Stanwell, 21 miles (by rail and road) S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 21 (1898).

7052. ——. *Assoc.with* Copper Pyrites and Olivine. *Loc.* Sel. (1822), Filly Flat, Gigoomgan Run, 20 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 59, p. 8 (1890).

——.**Sanidine** (*var.*). *Syn.* Glassy Felspar. Occurs as vitreous, transparent crystals in acidic volcanic rocks.

7053. —— ——. In elvan rock. *Loc.* Watsonville, head of James's Cr., 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe Br. line). *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

7054. —— —— (crystals). In trachytic tuff. *Loc.* Finlayson Hills, 22 miles N.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 53, p. 3 (1889).

7055. —— ——. In trachytic dyke. *Loc.* Calliope, Raglan Road, 12 miles S.S.W. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 21, p. 1 (1885).

7056. —— —— (crystals). *Loc.* Alawaina (D'Entrecasteaux Islands), 260 miles E. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 24 (1892).

Ortona Copper Mines, N.W. of Gilberton. *Discovery:* In 1899, by Prospectors Scardon and Smythe. *Min.Ref.* Azurite, *see* 202A; Malachite, 6246A; Redruthite, 7281A; Tile Ore, 2550A.

Ortt's Mine, Yorkey's Goldfield. *Min.Ref.* Copper Pyrites, *see* 2330; Epidote, 2609; Gold, 4411; Hematite, 4807; Iron Pyrites, 5454; Zinc Blende, 8213.

Oruba Mine, 2 miles E. of Zillmanton Rail. Stn. *Min.Ref.* Copper carbonate, *see* 1897; Hematite, 4720; Tenorite, 7724.

Osmiridium. *Syn.* Iridosmine. *Compo.*, Iridium, osmium, etc. *Colour*, tin-white. Malleable with difficulty. *H.* = 6-7. *Sp.gr.* = 19·3-21·12. *Contents* (*max.*), Iridium 43 to 77 per cent., Osmium 17 to 48 per cent.

MINERAL NOTE: Found with traces of platinum, gold, tin, and monazite, in the beach sands of Currumbin Beach, nr. Tweed Heads. The quantity of this mineral present in the sands is very small, and would not pay for extraction, but with gold, platinum and tin also present it has been considered worthy of the attention of miners. So far, however, all attempts to treat the beach sands have not been successful.

7057. ——. *Assoc.with* Platinum, in sand. Mouth of Tweed R., 69 miles (by rail) S.E. of Brisbane, on South Coast line. *Co.* Ward; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 196, p. 11 (1905).

7058. ——. Gira Goldfield, Mambare R., 96 miles N.N.E. of Port Moresby, Brit. New Guinea. *Ref.* G.S.M.

Osmium (Os). *Atom.Wt.* = 190·9. *Sp.gr.* = 22·47. *Colour*, bluish-metallic. Hard. Very heavy. *See* Osmiridium.

USES: Chiefly used in the manufacture of incandescent electric light filament. It is also used, in the form of Osmiridium, the native alloy, in the tipping of gold pens.

Oswald Mine, 8 miles N.N.W. of Anakie. *Min.Ref.* Gold, *see* 4168; Limonite, 5895; Magnetite, 6028.

Otago N. Mine, Gympie Goldfield. *Min.Ref.* Gold, *see* 4468.

Other Goldfields. *See* list of Subsidiary Fields and Mining Centres, Plate 46, 46A.

MINERAL STATISTICS: Gold, *see tables and diagram*, Pls. 36, 46, 46A, 47.

STATISTICAL NOTE: Several of these goldfields have yielded large quantities of gold, but they are not individually mentioned in the Annual Reports of the Mines Department, and their yields cannot be separated from one another. The total yield of gold from these small fields to end of 1912 amounted to 782,704 fine oz., valued at £3,324,711. This is equal to 4·42 per cent. of the whole gold production of the State.

Otho Camp, 4 miles N.W. of Calcifer. *Min.Ref.* Cerussite, *see* 1194; Copper carbonate, 1898; Cuprite, 2432; Malachite, 6229; Redruthite, 7279; Silver, 7467.

—— Lease (32), Chillagoe. *Min.Ref.* Cerussite, *see* 1194; Malachite, 6229; Silver, 7467.

Otto's Claim, McMaster's (Top Camp), Clermont. *Min.Ref.* Gold (alluvial), *see* 3277; Iron Pyrites, 5316.

Ottrelite. *Compo.*, Hyd. silicate of alumina and iron. *Colour*, greyish, greenish-grey. Occurs as imbedded grains in slate. *H.* = 6-7. *Sp.gr.* = 3·3.

7059. ——. In slate. Mareeba, 46 miles (by rail) W.byS. of Cairns, Cairns Railway, Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* **Cook.** *Ref.* B.D.

Outward Bound Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Oven's Sub-artesian Bore. *See under* Artesian Bores. No. 361.

Overflow Artesian Bore. *See under* Artesian Bores. No. 229.

Overland Reef, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2241; Gold, 4084; Malachite, 6292.

Overlander M.L. (661), Cloncurry. *Min.Ref.* Malachite, *see* 6162.

—— Lease (741), Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4033.

—— Silver Mine, Star R. (Argentine) Silver Field. *Min.Ref.* Cerussite, *see* 1276; Galena, 2991; Ironstone, 5578; Minium, 6622.

Overnewton Bore. *See under* Artesian Bores. No. 245.

Owen Macdonnell's Reef, Brovinia Diggings. *Min.Ref.* Gold, *see* 3634.

—— and Davidson Tin Lease, Mt. Amos, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 798 and Ruby Tin; Tourmaline, 7835; Orthoclase, 7035; Talc, 7671.

Oxford Downs Bore. *See under* Artesian Bores. No. 272.

—— Downs, S.W. of Mackay. Centre about *Lat.* 21° 49′ S.; *Long.* 148° 42′ E. *Min.Ref.* Barytes, *see* 277.

Oxides: Aluminium, *see* Corundum; antimony, *see* Cervantite, Valentinite; arsenic, *see* Arsenolite; bismuth, *see* Bismite; cobalt, *see* Asbolane; copper, *see* Cuprite, Tenorite; iron, *see* Göthite, Hematite, "Iron Ochre," "Ironstone," Limonite, Magnetite; lead, *see* Massicot, Minium; manganese, *see* Manganite, Psilomelane, Pyrolusite, Wad; molybdenium, *see* Molybdite; silicon, *see* Quartz, Chalcedony, Opal; tin, *see* Cassiterite; titanium, *see* Ilmenite, Rutile; tungsten, *see* Tungstite; uranium, *see* Pitchblende.

Oxley Cr., br. of White Mountain Cr., W.byN. of Upper Cape Diggings. *Min.Ref.* Gold (alluvial), *see* 3189.

——, 8 miles S.S.W. of Brisbane. *Lat.*, 27° 35′ S.; *Long.*, 153° E. *Min.Ref.* Clay, *see* 1581.

Oxton Downs Bore. *See under* Artesian Bores. Nos. 573, 574.

Oxy-chlorides: Copper, *see* Atacamite; lead, *see* Matlockite.

Ozokerite. *Syn.* Mineral Wax. *Compo.*, A simple hydrocarbon. *Colour*, yellowish, greenish. Waxy. *Sp.gr.* = 0·85-0·90.

7060. —— Yabba (Jimna) Goldfield, 35 miles S. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* Q.M.

P. and O. Mine, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3835; Mispickel, 6720.

Packsaddle Bore. *See under* Artesian Bores. No. 388.

—— Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3499.

Paddock Cr., Balcomba Range. *Min.Ref.* Tetrahedrite, *see* 7776.

—— Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4287; Iron Pyrites, 5385; Limonite, 5908; Mispickel, 6796; Zinc Blende, 8198.

—— Swamp Tin Deposit, Stanthorpe. *See* Pl. 30.

—— Workings, Mt. Flora G. and M. Field. *Min.Ref.* Chrysocolla, *see* 1534A; Hematite, 4769A; Malachite, 6339C.

Paddy's Cr., 1½ mile S.W. of Rockwood Stn. *Min.Ref.* Gold (alluvial), *see* 3363, (reef) 4182.

—— Gully, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270, (reef) 4052, 4052A; Silver, 7488.

Paint-making materials. *See* Pigments.

Painted Peak M.F. (1807), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235H; Copper Pyrites, 2269C; Hematite, 4769D; Iron Pyrites, 5327C; Malachite, 6339K.

Paisley Silver Mine, Muldiva. *Min.Ref.* Argentite, *see* 97; Atacamite, 131; Calcite, 484; Cerussite, 1204; Native Copper, 1993; Cuprite, 2436; Kaolin, 5679; Malachite, 6234; Pyrargyrite, 7113; Pyromorphite, 7143; Silver, 7463; Smithsonite, 7568; Tremolite, 4874; Zinc Blende, 8087.

—— and Chamberlain's Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 910.

Pajingo Lease Bores. *See under* Artesian Bores. No. 371.

Pakington Co. Port Curtis and Leichhardt Districts. *See maps*, Pls. 2, 10.

Palen (Par. of), Pors. 26V and 37, S.W. of Beaudesert. *Min.Ref.* Coal, *see* 1782A, 1782B.

Palgrave Goldfield—

Situation: *See maps*, Pls. 12, 13. The field is 21 miles W.S.W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. Centre about *Lat.* 28° 10′ S.; *Long.* 151° 40′ E.

Proclamation of Field: First gazetted, 25th July, 1890; last alteration gazetted, 3rd July, 1897, as follows:—Commencing at the south-east corner of portion 4V, and bounded thence on the north by that portion and a line bearing west 329 chains; on the west by a line bearing south 106 chains and 88 links; on the south by a line bearing east about 301 chains and 51 links; and on the east by a road bearing 340 degrees 8 chains, 10 degrees 25 chains and 25 links, 28 degrees 6 chains and 40 links, 9 degrees 30 minutes 27 chains and 33 links, 45 degrees 21 chains and 4 links, 11 degrees 11 chains and 97 links, and 27 degrees 15 chains to the point of commencement.

Area: 3,226 acres (ab. 5 sq. miles).

Mineral Statistics: Gold. *Included in* "Other Goldfields" *in stat. tables and diagram.* Pls. 36, 46, 46A, 47.

Mineral References: Gold, *see* 3848, 3849.

Geological Note: No geological examination has been made of the field.

Geological Publications: *Nil.*

Warden: Stationed at Warwick. Inspector of Mines: Stationed at Gympie.

Palladium (Pd). *Atom.Wt.* = 106·7. *Sp.gr.* = 11·8. Occurs as a native alloy with Platinum.

Pallico Bore. *See under* Artesian Bores. No. 226.

Palm Creek (Colliery). *See* Tannymorel Colliery.

Palm-tree Cr., 8 miles N. of Helidon. *Min.Ref.* Coal, *see* 1720.

—— —— Mining Centre, N.W. of Cloncurry. *Includes* Native Companion Group of Copper Mines. *Min.Ref.* Chrysocolla, *see* 1490; Copper (native), 1975; Copper Pyrites, 2062; Cuprite, 2384; Redruthite, 7206.

—— Gully, S. of Mackay. *Min.Ref.* Graphite, *see* 4601.

—— Reef, Copperfield. Clermont Goldfield. *Min.Ref.* Galena, *see* 3024; Gold, 4159; Iron Pyrites, 5323.

Palmer Co. Warrego Dist. *See map*, Pl. 18.

Palmer Goldfield—

Situation: *See maps*, Pls. 8, 9. The township of Maytown is 36 miles S. of Laura Rail. Stn. (Cooktown line), and 103 miles (by rail and road) S.byW. of Cooktown. *Cos.* Banks, Chelmsford, Dagmar, King, and Strathleven; *Dist.* Cook.

Population: 678 (census, 1911).

Discovery: Gold was discovered on the Palmer in August, 1872, by the Hann Exploring Expedition. J. Mulligan and party prospected the same field in 1873, and in that year found gold in payable quantities. In September, as a result of the discovery, a rush by thousands of poor inexperienced men took place with disastrous results, and the Government at that time found it necessary to guarantee the A.S.N. Co. (now the A.U.S.N. Co.) £1 10s. as fare for every person who desired to return by their steamers. Amongst those remaining were many experienced miners who prospected the Palmer more thoroughly, and in July, 1874, rich alluvial gold deposits were found, and when this became known another rush took place of greater magnitude than the first one. People from all parts of Australasia and New Zealand flocked to Cooktown, the port for the Palmer Goldfield, and in a few months over 30,000 Europeans had arrived by steamers and otherwise, and were soon on their way to the New Eldorado. Chinamen began to enter Cooktown about the end of 1874, and early in 1875 there were fully 15,000 in the district, this number increasing to 25,000 later on. Most of the Chinese were from Hongkong, but many came from the mines at the Expedition Range, near Clermont. Mr. Russell Dixon, who was an official at Cooktown during the Palmer rushes, and closely in touch with shipping companies, states that the Government estimate of the number of Europeans and Chinamen on the field in 1875—26,000—was much too small, the actual number being over 50,000.

Tin was discovered on the Palmer about 1879 at Cannibal Cr., the value of output prior to 1880 being estimated at £22,500.

Proclamation of Field: First gazetted, 27th November, 1873; last alteration gazetted, 2nd June, 1910, as follows:—Commencing at the confluence of the King River with the Palmer River, and bounded thence by the King River and Annie Creek upwards to the Great Dividing Range; thence by that range south-east and east to the west watershed of Brady and Shepherd Creeks (the heads of the Little Laura River), by that watershed northerly, and the north watershed of Shepherd Creek north-easterly to its junction with the Little Laura River; thence by the north and east watersheds of a small creek and the east watershed of Shepherd and Brady Creeks easterly and southerly to the Great Dividing Range; by that range in an easterly direction to the west watershed of the West Normanby River; by that watershed and the north-west watershed of Isabella Creek (a tributary of said river) north-easterly and easterly to the junction of the said creek with the West Normanby River; thence by the east watershed of the West Normanby River and tributaries above the junction of Isabella Creek easterly and southerly again to the Great Dividing Range; by that range south-east to north-west watershed of Spencer Creek (one of the heads of McLeod River); by that watershed south-west to the north-east corner of Crystal Springs Block; by that block west and south-west to North-west watershed of the McLeod River; by that watershed and the watershed between the St. George and Mitchell Rivers south-west and west to the Mitchell River at the junction of the said rivers; thence by the Mitchell River downwards to the west watershed of the Little Mitchell River; by that watershed north to the south watershed of the Palmer River; by that watershed west and the south-west watershed of Arabella Creek north-west to the point of commencement.

Area: 2,208,000 acres (3,450 sq. miles).

Palmer Goldfield—*continued*:

Leases: Gold-mining Leases and applications in force, 11; area, 70 acres. Miners' Homestead Leases and applications, 5; area, 90 acres (1912).

Principal Mining Centres: Gold—Maytown, Limestone, Palmerville, Jessop's Hill, etc. Tin—Cannibal Creek, Granite Creek, *which see*.

Mineral Statistics: Gold, *see tables and diagrams*, Pls. 36, 46, 46a, 47. Tin, *see tables*, Pls. 38, 46, 46a.

Gold, Average Values: *See under* Gold.

Statistical Note: Greatest recorded annual gold yield was in 1878, 116,759 fine oz., value £495,960. Smallest annual gold yield was in 1911, 214 fine oz., worth £909. Previous to the year 1878 (*i.e.*, from 1874 to 1877) the returns of gold from the Palmer were bunched, the four years' yield being estimated at 819,647 fine oz. From 1878 onward the gold yield of this field fluctuated, but generally became less and less every year.

The total yield of gold of this field to end of the year 1912 is estimated to be 1,327,016 fine oz., valued at £5,636,802. This is equal to 7·43 per cent. of the whole production of the State.

Mineral References: Gold (alluvial), *see* 3205-3207, (reef) 3670-3691; Lead (Anglesite), 16, (Massicot) 6531; Copper (Cuprite), 2426, 2427, (Malachite) 6212-6214, (Tile Ore) 2545; Tin (Cassiterite), 834; Scheelite, 7340; Manganese (Dioxide), 6403, (Psilomelane) 7083, 7084, (Pyrolusite) 7116; Rutile, 7326; Iron (Hematite), 4704, (Ilmenite) 4890, (Ironstone) 5518, 5519, (Mispickel) 6673-6675; Limestone, 633; Marble, 582. Other Minerals: Kaolin, 5675; Muscovite, 6889; Ruby, 2358.

Geological Note: Palaeozoic schists, slates, and quartzites outcrop over a portion of the field, and in places are capped with conglomerates and sandstones belonging to the Desert Sandstone Formation (Upper Cretaceous). Limestone outcrops are also to be seen, together with well-defined dolerite and diorite intrusions in the slates and schists. £5,000,000 worth of gold has been taken from the watercourses and alluvial flats on the Palmer, but no deep leads have so far been discovered. Reefs occur in the slates and schists, and are of a promising character, but have not received the attention they deserve. *See* G.S.Q. Pubs. 108, 123, 144 for details.

Geological Publications: Reports Nos. 41 (1888), 46 (1889), 108 (1896), 123 (1897), 144 (1899). Maps Nos. 109, 110, 111. *See under* Geol. Surv. Pub. List for title. *See also under* Govt. Ming. Jour., Report No. 28. *See also* A.R.D.M., pp. 81-88 (1887).

Warden: Stationed at Cooktown. Inspector of Mines: Stationed at Croydon.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Crushing Mills: Eight Batteries (53 Stamps). Charges, 15s. to £1 per ton.

Palmer River (reefs on left-hand br. of), nr. Maytown, Palmer Goldfield. *Include* Gypsy, Independent, Macpherson's, Star of the South, and Walhalla Reefs. *Min.Ref.* Gold, *see* 3683-3687.

—— —— (left-hand br. of) (*ante*). *Min.Ref.* Anglesite, *see* 16; Massicot, 6531; Psilomelane, 7084.

Palmer's (Offham) Bore. *See under* Artesian Bores. No. 225.

Palmerston Co. Port Curtis Dist. *See map*, Pl. 2.

Palmerville, Palmer Goldfield. *Lat.*, 15° 59′ S.; *Long.*, 144° 1′ E. *Min.Ref.* Ilmenite, *see* 4890; Muscovite, 6889.

—— (3 miles N. of). *Min.Ref.* Cuprite, *see* 2427; Limestone, 633; Malachite, 6214; Marble, 582.

Palmwoods, N. of Caboolture. *Min.Ref.* Coal, *see* 1715.

Palparara Bore. *See under* Artesian Bores. No. 432.

Paluma Co. Mitchell Dist. *See map*, Pl. 18.

Pancake Gully, E. side of Boyne River, S. of Gladstone. *Min.Ref.* Calcite, *see* 527; Gold (alluvial), 3378.

Pandanus Cattle Stn., 70 miles N.byE. of Mt. Emu Plains Stn. *Min.Ref.* Antimony, *see* 70.

—— Creek, Pentland, Cape R. Goldfield. *Min.Ref.* Hematite, *see* 4737.

—— Cr. Bore. *See under* Artesian Bores. No. 187.

Pandora Silver-Lead Mine, Dargalong. *Min.Ref.* Anglesite, *see* 34; Cerussite, 1199; Copper carbonate, 1894; Galena, 2795; Massicot, 6529; Minium, 6586.

—— Tin Mine, Irvinebank. *Min.Ref.* Cassiterite, *see* 868.

Pandorah Sub-artesian Bore. *See under* Artesian Bores. No. 311.

Pannietta Island, Brit. New Guinea. *Min.Ref.* Limestone, *see* 708; Limonite, 5927.

Papa Reef, Etheridge Goldfield. *Min.Ref.* Copper Pyrites, *see* 2149; Galena, 2755; Gold, 3729; Iron Pyrites, 5048; Mispickel, 6682; Zinc Blende, 8077.

Paper-making. For *bleaching* purposes, manganese-dioxide is used in generating chlorine gas and in producing chloride of lime. For *dressing* the paper, kaolin, barytes, gypsum, and lead compounds are used. *Colouring* ingredients are made up of compounds containing iron, zinc, lead, chromium, copper, aluminium, and cobalt. For references to minerals, compounds, and occurrences *see under* Manganese, Barytes, Gypsum, Lead, Iron, Zinc, Chromium, Copper, Aluminium, and Cobalt.

Papua. *See* British New Guinea.

Papuan Block Mine, Charters Towers Goldfield. *Min.Ref.* Gold, *see* 3924; Iron Pyrites, 5192.

—— Brilliant and Victoria G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2900; Gold, 3925; Iron Pyrites, 5193.

Parada. Sixty-four miles (by rail) S.W.byW. of Cairns (Chillagoe line). *See* Pl. 22. The Railway Base for Scheelite and Copper Mines. The rocks about the locality are slates and quartzites with intrusive porphyries. Scheelite and copper lodes occur in the slates, etc.

—— Mines, Walsh R., 1 mile N. of Parada. *Min.Ref.* Azurite, *see* 189A; Cuprite, 2428; Malachite, 6219; Scheelite, 7344; Wolfram, 7946.

Paradise Bore. *See under* Artesian Bores. No. 229.

Paradise Goldfield—

Situation: *See maps*, Pls. 4, 5. Two miles below Yarrabil Cr., 8 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. Centre about *Lat.* 25° 25′ S.; *Long.* 152° 13′ E.

Discovery: In 1889, by Messrs. Allen and party.

Proclamation of Field: First and only one gazetted, 28th November, 1890, as follows:—Commencing on the right bank of the Burnett River at the crossing of the road from Mount Perry to Tawah Creek, and bounded thence on the north-east by a line bearing 135 degrees, three miles and a-half; on the south-east by a line bearing 225 degrees, four miles and three-quarters; on the south-west by a line bearing 315 degrees, one mile and a-half to the north-west boundary of the Chowey Run, by that boundary (being the south-eastern watershed of Yarrabil or Bin Bin Creek) northerly to the Burnett River; and thence by the Burnett River downwards to the point of commencement.

Area: 8,320 acres (13 sq. miles).

Mineral Statistics: Gold, *included in* "Other Goldfields" *in tables and diagram*, Pls. 36, 46, 46A, 47.

Statistical Notes: *See under* Other Goldfields.

Mineral References: Gold, *see* 3608-3620; Lead (Galena), 2725; Copper (Ore), 2024; Zinc Blende, 8070; Iron (Iron Pyrites) 5003, 5004, (Ironstone) 5515; Limestone, 627. Other Minerals—Magnesite, 5944.

Geological Note: The country rocks consist of siliceous slates, quartzites, limestones, and porphyry, the slates preponderating, but the relation of these rocks to one another are not understood. Quartz reefs traverse the slates, and have been worked to some extent, the gold in the reefs being finely disseminated, and troublesome to save. Alluvial deposits of gold are unknown. *See* G.S.Q. Pubs. Nos. 68 and 178 for details.

Geological Publications: Reports—Nos. 68, 173. *See under* Geol. Surv. Pub. List for titles.

Warden: Stationed at Maryborough. Inspector of Mines: Stationed at Rockhampton.

Paradise P.C. Mine, Paradise Goldfield. *Min.Ref.* Galena, *see* 2725; Gold, 3619; Iron Pyrites, 5004; Zinc Blende, 8070.

—— or Scrubby Cr., 8 miles N.W. of Degilbo. *Min.Ref.* Limestone, *see* 627.

7060a. **Paraffin Wax.** Consists of a mixture of hydrocarbons of the paraffin series. About 10 per cent. is oil of higher boiling point than kerosene, the remainder being paraffin wax. *Loc.* Ruthven Bore, No. 2 (4049 feet). *Lat.*, 24° 7′ S.; *Long.*, 144° 4′ E. *Co.* Ruthven; *Dist.* Mitchell. *See* No. 387 *under* Artesian Bores.

Parallel Reef, Horn Island Goldfield. *Min.Ref.* Galena, *see* 2815; Gold, 3805; Iron Pyrites, 5088.

Parian Marble. *Syn.* Alabaster, *var.* of Gypsum. *See* note under Calcium.

Parish Maps. Copies obtainable at Lands Department, Brisbane, and at country branches of Lands Department.

Park Farm Bore. *See under* Artesian Bores. No. 142.

Parker Co. Burke Dist. *See map,* Pl. 20.

Parnell (Tuaburra) Bore. *See under* Artesian Bores. No. 358.

—— Reef, Flanagan's, Croydon Goldfield. *Min.Ref.* Gold, *see* 3504.

—— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 911; Ironstone, 5525; Wolfram, 7952.

Paroo Co. Warrego Dist. *See map,* Pl. 18.

—— Div. Board's Bore. *See under* Artesian Bores. No. 24.

Paroo Mineral (Opal) Field—

Situation: *See maps,* Pls. 18, 19. About 75 to 95 miles W.N.W. to N.W. of Cunnamulla Rail. Stn. *Cos.* Bulloo, Humeburn, Norley, and Wellington; *Dist.* Warrego. Between *Lats.* 27° and 28° S.; *Longs.* 144° and 145° E.

Proclamation of Field: First (and only one) gazetted, 30th July, 1897, as follows:—Commencing on the left bank of the Coorni Paroo River at the south-west corner of Owthorpe No. 9 Block, and bounded thence on the south by the south boundaries of Owthorpe No. 9 and Down, by part of the east boundary of Down, by the north and part of the east boundary of Box Camp, the south boundary of Cecil Plains, part of the west and the south boundaries of Cecil Downs, by part of the west and the south boundaries of Retrae and Dundoo; on the east by the east boundaries of Dundoo and Marathon East, by part of the south boundary of Chevy, by the east boundaries of Chevy, Wanco, and Morton Plains; on the north by the north boundaries of Morton Plains, Wanco, Watoota, and Green to Beengala Creek; on the west by that creek downwards to the Coorni Paroo River; and thence by that river to the point of commencement.

Area: 987,520 acres (1,543 sq. miles).

Principal Mining Centres: Duck, Sheep Station, and Emu Creeks and Lushington Opal Mines, *which see.*

Mineral Statistics: Opal, *see stat. tables,* Pls. 44, 46, 46a.

Statistical Note: The Opal Mining Centres in the Paroo Mineral Field produced in the year 1895 opal to the value of £12,500, the previous year's product being valued at £12,000. In the years 1891 and 1892 the returns were equal, viz., £10,000 each, but since the year 1895 the results fluctuated and gradually dwindled until, in the year 1909, the value of the opal won was only £450. The total yield of opal to the end of 1912 equalled £73,805. This value is equal to 44·40 per cent. of the total production of opal in the State.

Mineral References: Precious Opal, *see* 6955-6961.

Geological Note: The rocks of the Paroo Mineral Field comprise "Desert Sandstone" (Upper Cretaceous), and "Rolling Downs" (Lower Cretaceous) Formations. The Opal is found under varying conditions, commonly in white, grey, or pink sandstone, and in ironstone bands, and sometimes in pipe-like or pencil-like formations.

Geological Publications: Report—No. 177 (1892). *See under* Geol. Surv. Pub. List for title.

Wardens: Stationed at Cunnamulla and at Thargomindah; Inspector of Mines: Stationed at Gympie.

Parrot Cr., Annan Tinfield. *Min.Ref.* Cassiterite, *see* 813, 814.

—— ——, Bowen R., S.S.W. of Bowen. *Min.Ref.* Hornblende, *see* 4837; Kalinite, 5669.

Pascoe River. *See maps*, Pls. 8, 9. Weymouth Bay, 240 miles N.W. of Cooktown. Alluvial tin and wolfram were discovered here in 1887. Anthracite discovered in 1904. *Min.Ref.* Cassiterite, *see* 972; Coal, 1618; Ironstone, 5537; Wolfram, 7982. *See also under* Govt. Ming. Jour., Report No. 81.

Pascoe's Coal Mine, S. of Bluff Rail. Stn. (Central line). *Min.Ref.* Calcite, *see* 579.

Paterson's Claim, McMaster, Clermont Goldfield. *Min.Ref.* Epsomite, *see* 2617; Gold (alluvial), 3278; Ironstone, 5589; Marcasite, 6515; Psilomelane, 7091.

Patience Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 187.

Patrick Bore. *See under* Artesian Bores. No. 156.

Patterson Bore. *See under* Artesian Bores. No. 51.

Pawella Bore. *See under* Artesian Bores. No. 142.

Paxo Reef, Georgetown, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3732.

Paynter's Creek, Blackall Range. *Min.Ref.* Coal, *see* 1711.

Peabody Reef, Charters Towers Goldfield. *Min.Ref.* Gold and Iron Pyrites, *see* 3965.

Peach (or Archer) River. Heads at the McIlwraith Range, 170 miles N.W. of Cooktown, flows W. into Gulf of Carpentaria about 190 miles S.S.W. of Thursday Is. Length about 150 miles. *Lat.*, 13° 25′ S.; *Long.*, 142° 50′ E. *Min.Ref.* Cassiterite, *see* 965; Ironstone sand, 5534.

Peak Downs Goldfield. *See* Clermont Goldfield.

Peak Downs Copper Mine, Copperfield, Clermont Goldfield. Discovered in 1862 by a prospector named Mollard. Up to 1871 the mine produced a million pounds' worth of copper. Dividends distributed amounted to £250,000, on an actual subscribed capital of £20,000.

MINERAL REFERENCES: Atacamite, *see* 137; Azurite, 234; Chabazite, 1313; Copper carbonate, 1949; Copper (native), 2005; Copper Oxide, 2049; Copper Pyrites, 2269; Cuprite, 2469; Gold, 4160; Hematite, 4766; Iron Pyrites, 5324; Malachite, 6333; Manganese-dioxide, 6448; Selenite, 4645; Tenorite, 7735; Tile Ore, 2568.

SMELTING WORKS: *See under* Smelting Works in Queensland.

Peak Island. Geological Note: *See under* Keppel Bay Islands.

—— Lode, Black Snake Goldfield. *Min.Ref.* Copper, *see* 1863.

—— Range, 38 miles E.byS. of Clermont. *Min.Ref.* Rock Crystal, *see* 7194.

—— Vale Station, 18 miles S.S.W. of Clermont. *Lat.*, 23° 0′ S.; *Long.*, 147° 30′ E. *Min.Ref.* Diallogite, *see* 148; Epidote, 2596; Gold (alluvial), 3360; Hematite, 4768; Hornblende 4839, (basaltic) 4873); Jasper (red), 5664; Magnetite, 6027; Scorodite, 7373; Tourmaline, 7865.

Pearl Group, Corella R., Cloncurry. *Includes* Pearl Extd. M.L., Pearl M.C., Bryden's M.L., and Spring Peaks M.C. *Min.Ref.* Chrysocolla, *see* 1505B; Copper Pyrites, 2090C; Hematite, 4685A; Hypersthene, 4876A; Iron Pyrites, 4926C; Limonite, 5780B; Malachite, 6140B; Redruthite, 7241AI, 7241B; Tile Ore, 2519A.

—— M.C. (106), Cloncurry. *Min.Ref.* Iron Pyrites, *see* 4926C; Limonite, 5780B; Malachite, 6140B; Redruthite, 7241A1.

Pegler's Bore. *See under* Artesian Bores. No. 196.

Pelham Co. Port Curtis Dist. *See map*, Pl. 2.

Pelican Cr., 50 miles S.W. of Bowen. *Min.Ref.* Agate, *see* 1376; Analcime, 9; Chalcedony, 1348; Coal, 1652-1655A; Copper carbonate, 1921; Laumonite, 5719; Malachite, 6296; Opal (common), 6979; Prehnite, 7076; Thomsonite, 7783.

GEOLOGICAL NOTE: The rocks comprise shales, sandstone, conglomerate, etc., belonging to the Lower Bowen Formation (Permo-Carboniferous), the series containing several seams of good coal. *See* G.S.Q. Pub. No. 92, p. 153, for details. Recently this field has been prospected for coal seams, and it is found that the geological features mentioned in this report requires modification. New seams have been discovered of great thickness, and the field promises to be an important one in future. B.D.

Pelorine Bore. *See under* Artesian Bores. No. 361.

Pemberley Bore. *See under* Artesian Bores. No. 135.

Pemberton (Par. of) (Pors. 22v and 10v), 19 miles S. of Gladstone. *Min.Ref.* Hematite, *see* 4780, 4781; Magnetite, 6040, 6041.

Pender Co. Gregory South Dist. *See map*, Pl. 18.

Pendine Bore. *See under* Artesian Bores. No. 142.

Peninsular King Reefs, Alice R. (Philp) Goldfield. *Min.Ref.* Gold, *see* 3826.

Penlan Bore. *See under* Artesian Bores. No. 358.

Penninite. *Compo.*, Hyd. silicate of alumina and magnesia. *Colour*, green shades, sometimes reddish and pink. *Sp.gr.* = 2·6-2·8. *H.* 2-2·5.

7061. ——. *Assoc.with* Rutile. *Loc.* Venus P.C., Mt. Surprise, 67 miles S.W. of Almaden Rail. Stn. (Chillagoe line). *Co.* Tate; *Dist.* **Cook.** *Ref.* O.R.

7062. ——. *Assoc.with* Cassiterite and Hematite, in quartz lode. *Loc.* Tasmania Tin Mine, Coolgarra, Return Cr., 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

7063. ——. *Assoc.with* Websterite, Chlorite, Fluorspar, Topaz, Cassiterite, Wolfram, Azurite, Malachite, Iron Pyrites, Mispickel, Göthite, Hematite, and Limonite, in quartz lode. *Loc.* Coolgarra Tin Mine (*ante*). *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

7064. ——. *Assoc.with* Copper Pyrites, Cassiterite, and Talc, in quartz. *Loc.* Wheal Vohr Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 16 (1883), and P.R.S.Q. vol. 4, p. 71 (1887).

——. **Rhodochrome** (*var.*). *Compo.*, Hyd. silicate of alumina and magnesia containing chromium. *Colour*, deep green, violet in thin splinters. *H.* = 2-2.5; *Sp.gr.* = 2·66-2·67.

7065. —— ——. *Assoc.with* Chlorite and Chromite, in serpentine. *Loc.* Flat Top Range, 22 miles E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 159, p. 18 (1901).

Pennsylvania Bore. *See under* Artesian Bores. No. 324.

Penny's (T.) (Colebah) Bore. *See under* Artesian Bores. No. 293.

Penola Downs Bores. *See under* Artesian Bores. Nos. 373.

Penrice (G.F.) Sub-artesian Bores. *See under* Artesian Bores. No. 272.

Pentland, Cape R. Goldfield. *See maps*, Pls. 16, 17. *Lat.*, 20° 34′ S.; *Long.*, 145° 25′ E. *Includes* Hayward, Sarah Howson, Big, Just-in-Time, and Mystery Reefs, and Hughes' Leader.

Mineral Reference: Galena, *see* 2949; Gold (alluvial) 3272, (reef) 4053-4058; Iron Pyrites, 5264-5266; Ironstone, 5552. *See also under* Govt. Ming. Jour., Report No. 95

Geological Note: The drift above the "wash" is made up of pebbles of quartz, schist, granite, and quartzite. The wash is a "cement" containing quartz pebbles, and rests on a bedrock of decomposed schist. Near the source the lead is narrow, and the deposits are payable, but where the lead is deep and wide there is very little gold. *See* G.S.Q. Pub. 96 for details and map.

—— Deep Lead, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3272.

Penycoed Bore. *See under* Artesian Bores. No. 388.

Penzance Mine, 3 miles N.E. of Mungana (Chillagoe line). *Min.Ref.* Azurite, *see* 200; Cerussite, 1209; Copper (ore), 2033; Copper Pyrites, 2176; Cuprite, 2441; Galena, 2807, 2808; Garnet, 3112; Hematite, 4718; Iron Pyrites, 5077; Malachite, 6241; Minium, 6590; Pyrrhotite, 7157; Silver, 7466; Wollastonite, 8043; Zinc Blende, 8088.

Peppin and Webber's Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946a.

Pera Co. Cook Dist. *See map*, Pl. 8.

Percy Co. Cook Dist. *See map*, Pl. 8.

—— Island (No. 2), N.E. of St. Lawrence. *Min.Ref.* Ironsand, *see* 5479; Magnetite, 6050.

Percy River, Etheridge Goldfield. *Min.Ref.* Agate, *see* 1371: Azurite, 202a; Bismutite, 400, 401; Cassiterite, 971; Copper carbonate, 1900; Corundum, 2368; Cuprite, 2442; Garnet, 3155; Gold (alluvial) 3236, (reef) 3831; Hematite, 4724; Limestone, 622; Malachite, 6246a; Redruthite, 7281a, 7282; Sapphire, 2345; Tile Ore, 2550a.

Percyville, Etheridge Goldfield.

GEOLOGICAL NOTE: The rocks consist of schists and intrusive masses of granite. Quartzites (of undetermined age) and outliers of Desert Sandstone (Upper Cretaceous) cap the hills in the district. Gold is obtained both in the reefs and alluvium. *See* G.S.Q. Pub. 151 for details and map.

MINERAL NOTE: 30,000 tons of stone crushed many years ago. Reef 2 ft. wide, carrying gold (7 oz.), copper (22 per cent.), and silver (7 oz.). Value of gold, 7s. 6d. per oz.

—— (about 4 miles below). *Min.Ref.* Corundum, *see* 2368; Sapphire, 2345.

Pericoota Bore. *See under* Artesian Bores. No. 356.

Peridot. *Syn.* (and *var.* of) Olivine, *which see.* Colour is a light or dark olive green

Perringunga Bore. *See under* Artesian Bores. No. 229.

Perry Goldfield—

SITUATION: *See maps*, Pls. 4, 5. St. Agnes Cr., Perry R., 15 miles S. of Gin Gin Rail. Stn., 44 miles (by rail and road) S.W. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. Centre about *Lat.* 25° 10′ S.; *Long.* 151° 50′ E.

PROCLAMATION OF FIELD: First (and only one) gazetted, 13th April, 1904, as follows:—The whole catchment area of the Perry River from a north and south line passing along the west boundary of Agricultural Homestead Portion 12v to a point three miles up the said river.

DISCOVERY: In 1902.

AREA: 11,200 acres = 17½ sq. miles.

MINERAL STATISTICS: Gold, *included in* "Other Goldfields" *in tables and diagram*, Pls. 36, 46, 46A, 47.

STATISTICAL NOTES: *See under* "Other Goldfields." No separate records.

MINERAL REFERENCES: Gold, 3589; Copper (Azurite) 173, (Malachite) 6194, 6195; Molybdenite, 6816, 6817; Manganese (Psilomelane) 7080; Iron (Iron Pyrites) 4994, (Turgite) 7886.

GEOLOGICAL NOTE: The country rock of the whole field is a much-folded clay schist, in which there are several lenticular-shaped gold-bearing quartz veins. Small quantities of limestone occur in the schist, while the granite, whose relation to the schist is unknown, is present on the west side of the Perry River. *See* G.S.Q. Pub. 184 for details.

GEOLOGICAL PUBLICATIONS: Report—No. 184 (1903). *See under* Geol. Surv. Pub. List for title.

WARDEN: Stationed at Mt. Perry. INSPECTOR OF MINES: Stationed at Gympie.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Perseverance Reef, Normanby Goldfield. *Min.Ref.* Gold, *see* 4133; Iron Pyrites, 5308; Silver, 7500. *See also* A.R.D.M., p. 171 (1907).

—— ——, Neurum Cr. 6 miles S.W. of Woodford. *Min.Ref.* Gold, *see* 4219.

—— ——. Golden Valley, Croydon. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

—— ——, Enoggera Goldfield. *Min.Ref.* Galena, *see* 3035A; Gold, 4215; Iron Pyrites, 5344; Zinc Blende, 8178.

—— ——, Gympie Goldfield. *Min.Ref.* Gold, *see* 4524.

—— ——, Kilkivan Goldfield. *Min.Ref.* Calcite, *see* 554; Gold, 4405.

—— ——, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3661.

—— Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1110; Chlorite, 1452; Wolfram, 8024.

—— and Nil Desperandum Lease (622), Gympie Goldfield. *Min.Ref.* Gold, *see* 4469.

Perth Sub-artesian Bore. *See under* Artesian Bores. No. 104.

Peru Bore. *See under* Artesian Bores. No. 255.

Peter and Paul Reef, "Two Mile," Gympie Goldfield. *Min.Ref.* Gold, *see* 4525.

Peter the Great Mine, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3821.

—— the Greek's Reef, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 4163.

Peter's Cr., Normanby Goldfield. *Min.Ref.* Copper Pyrites, *see* 2258; Gold, 4126; Marcasite, 6509; Mispickel, 6762.

—— Rush, Dee R., nr. Mt. Usher. *Min.Ref.* Gold (alluvial), *see* 3395, (nugget) 3446.

Petersen's Bore and Selection 2098, Quarry Cr., Stanwell. *See under* Coal Bores and *Min.Ref.* 1797.

Peterson's Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

Petford, 97 miles (by rail) S.W.byW. of Cairns (Chillagoe line).

RAILWAY BASE for wolfram mines at Bamford; wolfram and tin mines at Emuford; tin mines at Reid's Cr. *Min.Ref.* Garnet, *see* 3159B.

—— Springs, 2 miles S. of Petford Rail. Stn. *Min.Ref.* Mineral Water, *see* 6568.

Petitie Bore. *See under* Artesian Bores. No. 416.

Petroleum. *See notes under* Oil, and Oil-bearing Shale. *See also* "Petroleum in Queensland" in Q.G.M.J., vol. 11, p. 390 (1910), where there are several local references to the tapping of inflammable gases in boring operations.

Peut's Bores. *See under* Artesian Bores. Nos. 154, 184.

—— Reef, 1 mile S.E. of Mt. Morgan. *Min.Ref.* Gold, *see* 4375; Iron Pyrites, 5418.

Pewt's Hill, The Springs, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3337, 3353; Limonite, 5891.

P. F. Hanran Silver Mine, Argentine Silver Field. *Min.Ref.* Cerussite, *see* 1277; Minium, 6623.

Pfeiffer's Day Dawn Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2901; Gold, 3926; Iron Pyrites, 5194; Zinc Blende, 8129.

Phacolite. *Var. of* Chabazite, *which see.*

Philadelphia Mine, Paradise Goldfield. *Min.Ref.* Gold, *see* 3620; Iron Pyrites, 5003.

Phillip's Harbour (along the coast towards), Brit. New Guinea. *Min.Ref.* Coralline Limestone, *see* 730.

Phillot's Bore. *See under* Artesian Bres. No. 235.

Philp Co. Kennedy North Dist. *See map,* Pl. 16.

—— Goldfield. *See* Alice R. Goldfield.

Phœbe G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2902; Gold, 3927; Iron Pyrites, 5195.

Phœnician Lease (189), Mt. Browning Lodes, Mt. Amos. *Min.Ref.* Cassiterite, *see* 798A.

Phœnix Lease (829), Gympie Goldfield. *Min.Ref.* Galena, *see* 3086; Gold, 4470; Iron Pyrites, 5464.

—— 1 N. (834, 353 (?)), 2 N. (805), 3 N. (799), 4 N. (713, 648 (?)), 5 N. (648), 1 S. (825), 2 S. (512) Leases, Gympie Goldfield. *Min.Ref.* Galena, *see* 3087, 3088; Gold, 4472-4478; Iron Pyrites, 5465, 5466.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4526, 4527.

—— Reef, Towalla, Russell Extd. Goldfield. *Min.Ref.* Gold, *see* 3788; Mispickel, 6707.

—— Freehold Lease (649), Gympie Goldfield. *Min.Ref.* Gold, *see* 4471.

—— Golden Pile Lease (817), Gympie Goldfield. *Min.Ref.* Native Arsenic, *see* 101; Gold, 4479.

—— Prospector's Lease (514), Gympie Goldfield. *Min.Ref.* Gold, *see* 4480.

—— Mine, Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4101C; Iron Pyrites, 5293.

—— M.C. (340), Cloncurry. *Min.Ref.* Malachite, *see* 6120; Redruthite, 7227; Tile Ore, 2513.

—— Tin Mine, Cannibal Cr., Palmer. *Min.Ref.* Cassiterite, *see* 836.

—— ——, Herberton. *Min.Ref.* Cassiterite, *see* 1111; Iron Pyrites, 5141.

Phosphates—

Minerals: *See* Apatite (lime), Cacoxenite (iron), Chalcolite (copper-uranium), Guano (lime), Lazulite (alumina-iron-magnesia), Monazite (cerium-lanthanum-didymium), Pyromorphite (lead), Turquoise (alumina-vanadium), Vivianite (iron).

Uses: *See note under* Calcium.

Geological Note: The phosphatic deposits at Olsen's and Johansen's limestone caves, close to the Fitzroy River above Rockhampton, are of comparatively recent formation, and are exclusively the accumulation of bat guano. They were exploited to some extent a few years ago, but the investigations, although not exhaustive, were considered unsatisfactory, and the work was abandoned. *See* Q.G.M.J., Nov. 1903, p. 572. Recently other examinations have been made, but the results are not known.

Apatite occurs on several of the islands and on the mainland about Keppel Bay in the form of small veins, associated with Turquoise in quartzite and slate. The amount of phosphoric acid in the deposits which have been examined is too small to pay for extraction. *See* G.S.Q. Pub. No. 190 (1904).

Phosphorus (P.). *Atom.Wt.* = 31·04; *Sp.gr.* = 1·83—2·34, varying with the condition. *Colour*, yellowish. Semi-transparent.

Minerals: *See under* Phosphates.

Uses: Phosphorus is an important ingredient in some of the igniting compositions forming the heads of matches, and small quantities of the element are mixed with tin to form phosphor-tin and with copper to form phosphor-bronze. Some of its compounds are used as fertilizers, reference to which is made under Calcium.

Pialba. Cretaceous Coal Measures abound in this locality, and a few small coal seams have been exposed. Below these measures there exists a series of Cretaceous marine beds.

Pibald, nr. Dundee. *Min.Ref.* Manganese-dioxide, *see* 6479.

Piccadilly Goldfield—

Situation: *See maps*, Pls. 16, 17. The Field is about 60 miles N.W. of Ravenswood Junction. *Co.* Wilkie Gray; *Dist.* Kennedy North. Centre—about *Lat.* 19° 18′ S., *Long.* 145° 58′ E.

Population: (Included in Ravenswood returns).

Area: 3,840 acres (6 sq. miles).

Proclamation of Field: First (and only one) gazetted, 7th October, 1898, as follows:—On Smith's, Brook, and Hardwick Blocks, on Dotswood Station. The whole catchment area of the head branches of Piccadilly Creek down to a point bearing east from the north corner of Red Dyke Block.

Mineral Statistics: Gold, *included in* "Other Goldfields" *in stat. tables and diagram*, Pls. 36, 46, 46a, 47.

Statistical Note: *See under* "Other Goldfields."

Mineral References: Gold, *see* 4095.

Geological Note: No geological examination has been made.

Geological Publications: *Nil.*

Warden: Stationed at Ravenswood; Inspector of Mines: Stationed at Charters Towers.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— P.C., Piccadilly Goldfield. *Min.Ref.* Gold, *see* 4095.

Pickenjennie Bore. *See under* Artesian Bores. No. 53.

Picnic Island, 1½ mile N.N.W. of Gladstone. *Min.Ref.* Manganese-dioxide, *see* 6470.

—— Point, 3 miles S.E. of Toowoomba. *Min.Ref.* Olivine, *see* 6929.

Picotite. *Var. of* Spinel, *which see.*

Pidgeon Cr. Bore. *See under* Artesian Bores. No. 255.

Pie Creek, Gympie Goldfield. Manganese discovered here in 1908. *Min.Ref.* Manganese-dioxide, *see* 6494, 6494a; Psilomelane, 7105; Pyrolusite, 7134.

Pigments. Nearly all the minerals used in the preparation of paints and enamels are to be found in the State. No details are supplied regarding their paint-making qualities, but their occurrences are mentioned under separate mineral headings.

PIGMENTS,	MINERALS, METALS, ETC.
Bronzes	Copper, tin, zinc, aluminium, bismuth, mercury, mica.
Blue	Cobalt, copper, azurite, barytes, gypsum, lapis lazuli, kaolin, tripolite, sulphur.
Brown	Iron oxides.
Chromes—	
green	Chromium.
yellow	Chromium, lead, zinc.
lemon	Chromium, barium.
orange	Chromium, lead.
red	Chromium, lead.
Green	Chromium, barytes, gypsum, copper, lead, iron, arsenic, malachite, cobalt, green earth, phosphoric acid, boron, zinc.
Grey	Graphite.
Lake bases	Barytes, gypsum, kaolin, chalk, zinc oxide, tripolite.
Ochres	Red, yellow, and brown (Iron).
Orange	Cadmium, chromium, lead.
Red	Iron, lead, mercury, copper, barytes
White	Barytes, kaolin, gypsum, lead, zinc.
Yellow	Antimony, arsenic, barium, cobalt, chromium, mercury, iron, lead, strontium.

• Pike's Creek, Stanthorpe. Heads at Herries Range, flows west for about 7 miles, thence south 42 miles, entering the Dumaresq River, 34 miles S.W. byS. of Stanthorpe. Length about 50 miles. *Tribs.*, Ten-mile, Lighthouse, Oaky, Spring, Stockyard, Little Plains, and other Creeks. *Min.Ref.* Cassiterite, *see* 999; Hematite, 4725; Magnetite, 6001; Mispickel, 6717.

Pikedale (Ten-mile) Creek, Stanthorpe. *Min.Ref.* Cassiterite, *see* 997; Gold, 3840; Iron Pyrites, 5109; Mispickel, 6721: Molybdenite, 6854; Wolfram, 7989.

Pikedale Goldfield—

SITUATION: *See maps*, Pls. 12, 13. The Goldfield is about 20 miles N.W. byN. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. Centre—about *Lat.* 21° 27′ S., *Long.* 151° 50′ E.

POPULATION: Included in Stanthorpe returns.

DISCOVERY: In 1877.

AREA: 19,200 acres (30 sq. miles).

PROCLAMATION OF FIELD: First (and only one) gazetted, 2nd November, 1877, as follows:—Commencing at the Rosenthal Gate on the road from Warwick to Pikedale, where it crosses the watershed separating the Condamine River from the Barwon River, and bounded thence by a line bearing south-west six miles; then by a line north-west about six miles to the northern watershed of Pike's Creek; thence by that watershed north-easterly about four miles, and south-easterly about six miles to the point of commencement.

MINERAL STATISTICS: Gold. *Included in* "Other Goldfields" *in stat. tables and diagrams*, Pls. 36, 46, 46A, 47.

STATISTICAL NOTE: *See under* "Other Goldfields." No separate record.

MINERAL REFERENCES: Gold (alluvial), *see* 3246, (reef) 3834-3839; Lead (Galena), 2832; Manganese (Psilomelane), 7086; Iron (Iron Pyrites), 5110-5112, (Mispickel), 6719, 6720.

GEOLOGICAL NOTE: The country rocks are slate and greywackes (? Permo-Carboniferous), disturbed occasionally by intrusions of diorite, and traversed in numerous places by gold-bearing quartz veins.

GEOLOGICAL PUBLICATIONS: Reports Nos. 105 (1895), 120 (1898). *See under* Geol. Surv. Pub. List for title. *Also under* Supplementary Report List, Nos. 30, 116.

WARDEN: Stationed at Stanthorpe. INSPECTOR OF MINES: Stationed at Gympie and Ipswich.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Pikedale Head Stn., Woolshed Gully, Stanthorpe. *Min.Ref.* Copper carbonate, *see* 1903; Copper Pyrites, 2186; Galena, 2833; Ironstone, 5539; Manganese-dioxide, 6418; Redruthite, 7283; Zinc Blende, 8105.

—— Hotel (S. of), 11 miles W. of Stanthorpe. *Min.Ref.* Limonite, *see* 5854; Manganese-dioxide, 6417; Psilomelane, 7087; Pyrolusite, 7120; Wad, 7109.

—— Lode (Sels. 705, 706 W.), Pikedale Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 998; Gold, 3840; Mispickel, 6721; Molybdenite, 6854; Wolfram, 7990.

—— Silver Mine, Woolshed Gully, Stanthorpe. *Min.Ref.* Calcite, *see* 489; Copper carbonate, 1903; Copper Pyrites, 2186; Galena, 2833; Ironstone, 5539; Manganese-dioxide, 6418; Redruthite, 7283; Silver, 7473; Zinc Blende, 8105. *See also* A.R.D.M., p. 170 (1907).

Pilgrim Cr. Bore. *See under* Artesian Bores. No. 209.

—— Cr., trib. of Burke R., Cloncurry. *Min.Ref.* Chrysocolla, *see* 1524; Copper carbonate, 1907-1909; Copper Pyrites, 2208; Ironstone, 5545; Limonite, 5869; Malachite, 6270, 6271; Redruthite, 7292-7294; Tile Ore, 2558.

Pillar Lease, Koorboora. *Min.Ref.* Cassiterite, *see* 945.

Pilton, 11 miles S.E. of Greenmount. *Min.Ref.* Kaolin, *see* 5682A.

Pinabo Bore. *See under* Artesian Bores. No. 185.

Pine Creek. Runs northerly into Burnett River, 15 miles S.W. of Bundaberg. *Min.Ref.* Coal, *see* 1816. Geol. Pub. No 92, p. 307.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 218.

Pine Mountain, 7 miles (by rail) N.N.W. of Ipswich (Brisbane-Valley br. line). *Min.Ref.* Chromite, *see* 1475; Hematite, 4776; Ironstone, 5609; Limonite, 5900, 5901; Limestone, 664; Opal (common), 6989; Psilomelane, 7094; Serpentine, 7389; Turgite, 7900; Wollastonite, 8044; *also see* Supplementary Report List, No. 49, for further details.

Geological Note: The mountain is formed of belts of quartzite, in association with clay slates, serpentine, limestone, etc. The slates and quartzites contain ironstone, and in the serpentine there are deposits of chromite. *See* G.S.Q. Pub. No. 194 for details.

—— —— Road, $\frac{1}{4}$-mile N. of Muirlea Rail. Stn. *Min.Ref.* Chalcedony, *see* 1356.

—— Street Bore. *See under* Artesian Bores. No. 115.

Pine Vale Cr. Copper Mines, 9 miles S.byE. of Eton Rail. Stn. (Mackay line). *Min.Ref.* Azurite, *see* 230A; Bornite, 429A; Copper, 1848; Copper Pyrites, 2255; Galena, 3009; Gold, 4141; Ironstone, 5588; Malachite, 6326, 6327; Silver, 7499; Tenorite, 7734; Tetrahedrite, 7775.

Geological Note: The country rock is biotite granite, which carries a lode containing gold, silver, and copper, the mineral constituents being Bornite and Chalcopyrite (Copper Pyrites) in a gangue of quartz. *See* G.S.Q. Pub. No. 181 for details.

Geological Publications: Reports Nos. 53 (1889), 181 (1903), 229 (1910). *See under* Geol. Surv. Pub. List for title.

Pinfire Bore. *See under* Artesian Bores. No. 361.

Pinite. *Compo.*, Hyd. silicate of alumina, potash, etc. *Colour*, greyish, greenish, brownish, etc. Waxy. *H.* = 2·5-3·5. *Sp.gr.* = 2·6-2·85.

7066. ——. *Assoc.with* Gold, Iron Pyrites, Fluorspar, and Calcite. *Loc.* Daisy Mine, Coen Goldfield, 45 miles (by road) N.N.W. of Port Stewart, and 189 miles N.W. of Cooktown. *Co.* Coen; *Dist.* **Cook.** *Ref.* G.S.M.

7067. ——. *Assoc.with* Copper Pyrites, in granite. *Loc.* Teebar Copper Mines. Munna Cr., 2 miles S. of Boompa Rail. Stn. (Gayndah line), 44 miles (by rail and road) W. of Maryborough. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* L.C.B.

Pink Hill, The Springs, Clermont. *Min.Ref.* Gold (alluvial), *see* 3346.

Pinnacle Bore. *See under* Artesian Bores. No. 238.

—— Creek, br. of Lynd R., S.W.of Almaden. *Min.Ref.* Azurite, *see* 186A; Native Bismuth, 329; Bismutite, 383; Cassiterite, 831; Copper Pyrites, 2141A; Limonite, 5837A; Malachite, 6210A; Molybdenite, 6826; Scheelite, 7339; Wolfram, 7936.

—— Copper Workings, 48 miles S. of Gladstone. *Min.Ref.* Copper carbonate, *see* 1954; Copper Oxide, 2053.

—— Extd. Lease and Mine, Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1254; Copper carbonate, 1935; Galena, 2979; Malachite, 6307.

—— Tin Lease, Emu Cr. *Min.Ref.* Cassiterite, *see* 934; Orthoclase, 7041.

Pioneer M.L. (229), Cloncurry. *Min.Ref.* Azurite, *see* 169; Copper Pyrites, 2077; Gold, 3471; Limonite, 5761; Malachite, 6114; Redruthite, 7221; Tile Ore, 2507.

—— Reef, Horn Is. Goldfield. *Min.Ref.* Copper Pyrites, *see* 2180; Galena, 2821; Gold, 3814; Iron Pyrites, 5098; Zinc Blende, 8093.

—— ——, Clermont Goldfield. *Min.Ref.* Gold, *see* 4144.

—— ——, Gaeta Goldfield. *Min.Ref.* Gold, *see* 3574A; Iron Pyrites, 4975A.

—— ——, Hodgkinson Goldfield. *Min.Ref.* Galena, *see* 2764; Gold, 3752.

Pioneer River, Mackay. Heads at Connor's Range, flows for about 50 miles in a northerly and easterly direction and enters the ocean at Mackay. Tribs., Stockyard, Black's, Pine Vale, and Cattle Creeks. *Min.Ref.* Strontianite, *see* 7665.

Pioneer Chief Group, Cloncurry. *Includes* Pioneer Chief, Marabah, Pioneer Extd., Try Again, Easter Gift, Woomera, Noontide, Alabama, and Blue Bell M. Leases. *Min.Ref.* Azurite, *see* 164; Chrysocolla, 1506; Native Copper, 1981; Copper Pyrites, 2091-2093; Gold, 3470; Hematite, 4686; Iron Pyrites, 4927; Limonite, 5781-5783; Malachite, 6141-6144; Redruthite, 7242-7244; Siderite, 7402; Tile Ore, 2520-2522; Turgite, 7883.

—— —— M.L. (231), Cloncurry. *Min.Ref.* Native Copper, *see* 1981; Copper Pyrites, 2093; Iron Pyrites, 4927; Limonite, 5782; Malachite, 6143; Redruthite, 7244; Tile Ore, 2522.

Pipe Clay. *Var. of* Kaolin, *which see.*

Pirate Lease, Tate River. *Min.Ref.* Bornite, *see* 419.

Pitch. *Syn.* Asphaltum, *which see.*

Pitchblende. *Syn.* Uraninite. *Compo.*, Uranate of uranyl, lead, etc. *Colour and Streak*, velvet-black. *Lustre*, pitch-black. *H.* = 5·5. *Sp.gr.* = 9·0-9·7. *Contents* (*max.*), Oxides of Uranium 69 to 86 per cent.

MINERAL NOTE: Pitchblende, in association with Cassiterite and Chalcolite, has been found in traces in Northern Queensland. The conditions under which it is found in other countries often occur here on the tin and wolfram fields of Herberton and Chillagoe in Northern Queensland, and miners are always on the lookout for the mineral. A great number of inquiries have been made at the Geological Survey Office concerning it, but samples sent for examination have failed to show its presence. A common source of error is the confusion of the names Pitchstone and Pitchblende, miners often getting the impression that Pitchstone is the valuable radio-active mineral. *See* notes under Uranium and Radium.

7068. —— (traces). *Assoc.with* Cassiterite and Chalcolite. *Loc.* Gladstone Tin Mine, Eureka Cr., Stannary Hills, 93 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* B.D.

7069. —— (?). In quartz lode in granite (?). *Loc.* In mountainous country, right-hand branch of Sheep Station Cr. between Monsildale and Jimna, about 15 miles N.E.byN. of Linville Rail. Stn. (Brisbane-Valley line). *Co.* Canning; *Dist.* Moreton.

Pitteroo Co. Warrego Dist. *See map*, Pl. 18.

Pitt's Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Pittsworth (Beuraba), 36 miles (by rail) S.W.byW. of Toowoomba. *Min.Ref.* Asbolane, *see* 119; Calcite, 487; Göthite, 4565, 4566; Limonite, 5850-5852; Lithomarge, 5711; Magnetite, 5999; Manganese-dioxide, 6415; Turgite, 7893, 7894. *Geological Note:* Coal Measures occur throughout the district, in association with which there are small areas of basalt. Ferruginous calcite occurs in places passing into low-grade iron ore.

Piturie Co. Gregory North Dist. *See map*, Pl. 20.

Plagioclase. A general term for the triclinic felspars.

7070. ——. Calcifer Mines (on Chillagoe line), 132 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 61 (1900).

7071. ——. *Assoc.with* Apatite (crystals), in diorite. *Loc.* Plant's Range, Charters Towers, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 71 (1887).

Plain (The) Bore. *See under* Artesian Bores. No. 242.

Plainby, N.N.E. of Toowoomba. *Min.Ref.* Beauxite, *see* 289.

Plains Bore. *See under* Artesian Bores. No. 221.

Planet Down Stn. Homestead (nr.), S.byE. of Comet Rail. Stn. *Min.Ref.* Tripolite, *see* 7029A, 7029B.

—— Group of Leases, Oakey Cr., Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1160.

Plantagenet Co. Leichhardt Dist. *See map*, Pl. 10.

Plant's Leasehold, 4 miles E. of Crow's Nest Rail. Stn. *Min.Ref.* Cerussite, *see* 1296; Iron Pyrites, 5332; Massicot, 6545; Mispickel, 6775; Scorodite, 7374; Wolfram, 8039.

—— Range, N.W. of Charters Towers. *Min.Ref.* Apatite, *see* 78; Plagioclase, 7071.

—— Shaft (Golden Gate Gold Mines), Croydon Goldfield. *Min.Ref.* Argentine, *see* 564; Calcite, 465, 466; Fluorspar, 2653; Galena, 2698; Gold, 3512, 3513; Graphite, 4578; Heulandite, 4819; Iron Pyrites, 4949; Stilbite, 7662.

Plaster of Paris. *See* note under Calcium.

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MAPS.

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37. Silver.
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55. Coal.
56. Gems—Opals. Sapphires.
57. Total Mineral Production.

Platinum (Pt.). *Atom.Wt.* 195·2. *Sp.gr.* 21·5 (pure). *Colour,* bright silver-white.

MINERAL NOTE: Platinum has been found on the Russell River Goldfield and at Gympie, in association with alluvial gold deposits, and at the latter place also in gold-bearing quartz reefs. It also is found in the beach sands near the mouth of the Tweed River at Currumbin Beach, with osmiridium, monazite, gold, and tin. Many attempts have been made by individual miners to work the beach sands of the Tweed, but without satisfactory results. Increased demands and smaller production, and the consequent higher value, should stimulate the prospecting for this mineral.

USES: Crucibles, dishes, wire, foil, etc., used in chemical operations necessitating the employment of corrosive acids, are made of platinum. The metal is also used in the manufacture of surgical, physiological, and electrical appliances, and as a mount for diamond setting in the better class of jewellery. Compounds of platinum are used in photographic processes, and as chemical reagents. For most uses platinum is best alloyed with a small quantity of iridium, the two in combination forming a hard and tough alloy.

DISCOVERY: First found in 1869, at Brickfield Gully, Gympie Goldfield, several pieces up to 8 dwt. being found with alluvial gold.

Platinum (native). *Compo.,* Platinum, iron, iridium, etc. *Colour,* whitish. Metallic. Malleable. *H.* = 4-4·5. *Sp.gr.* = 14-19. *Contents (max.),* Platinum 51 to 86 per cent., with iridium, iron, etc.

7072. —— (in minute flakes). *Assoc.with* Gold, in alluvial deposits. *Loc.* Clarke and Joss's Claim, on terraces between Cooppooroo, Wairamba Creeks, Russell Goldfield, 21 miles W.N.W. of Geraldton. *Co.* Nares; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 45, p, 3 (1888).

7073. ——. *Assoc.with* Gold, Silver, Tin, Monazite, and Osmiridium, in beach sands. *Loc.* At the mouth of the Tweed River and between Currumbin Creek and Point Danger, 69 miles (by rail) S.E. of Brisbane (South Coast line). *Co.* Ward; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 198 (1905).

7074. —— (?). *Assoc.with* Gold, in alluvial deposits. *Loc.* Brickfield Gully, nr. Lady Mary Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* B.D.

7074A. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* In Warren Hastings Shaft, in Lady Mary and Alma Reefs (on 1st bed of slate), Gympie Goldfield (*ante*). *Ref.* B.D.

Pleasant Lode, Alma Cr., S.S.E. of Mt. Morgan. *Min.Ref.* Ilmenite, *see* 4912.

Pleonaste. *Var. of* Spinel, *which see.*

Plugged Bore. *See under* Artesian Bores. No. 324.

Plumbago. *Syn.* Graphite, *which see.*

Plum-tree Cr., Ravenswood Goldfield (Comstock Silver Mine). *Min.Ref.* Galena, *see* 2926; Silver, 7484.

—— Hotel and Star and Dotswood Runs (between), Star R. *Min.Ref.* Cassiterite, *see* 1165.

Poimena Bore. *See under* Artesian Bores. No. 307.

Poingdestre Bore. *See under* Artesian Bores. No. 297.

Point Danger (Tweed Heads). Nr. Currumbin Beach, 69 miles (by rail) S.S.E. of Brisbane. *Min.Ref.* Cassiterite, *see* 1174; Gold, 3370; Monazite, 6881; Platinum, 7073; Silver, 7511; Sphaerosiderite, 7422.

GEOLOGICAL NOTE: The rocks forming the headland consist of basalt. In some places the basalt has a columnar structure, but is generally massive or irregularly bedded. Common black opal occurs in the basalt, and is, apparently, an alteration product of tripolite, the latter mineral being frequently found in association with basalt in this district.

Police Cr., br. of Gregory R., S.S.W. of Burketown. *Min.Ref.* Hematite, *see* 4677; Hornstone, 1391; Ironstone, 5487; Manganese-dioxide, 6389; Pyrolusite, 7115; Yellow Ochre, 5933.

Policeman Cr., Anakie. Flows into Retreat Cr. 6 miles N. of Glendarriwill Rail. Stn. (Central line). *See* Pl. 31. *Min.Ref.* Amethyst, *see* 7170; Cairngorm, 7181; Chalcedony, 1350A; Gold (alluvial), 3361; Ilmenite, 4902; Jasper, 5643; Magnesite, 5951; Magnetite, 6029; Rutile, 7335; Sapphire, 2355; Spinel, 7581; Topaz, 7806; Tourmaline, 7864; Zircon (*var.* Hyacinth), 8236.

—— —— (N. of), 9 miles N. of Anakie Rail. Stn. *Min.Ref.* Gold, *see* 4170; Hematite, 4769; Hornblende, 4838; Limonite, 5893.

—— Knob, 10 miles N.W.byN. of Anakie. *Min.Ref.* Hyacinth, *see* 8237; Olivine, 6927B; Pleonaste, 7588; Zircon, 8237.

—— M.C. (206), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1495; Copper Pyrites, 2072; Hematite, 4682; Limonite, 5753; Redruthite, 7213; Tile Ore, 2499.

Polishing Materials. *See* Tripolite, Corundum. Tripolite, as a polishing powder, is useful in many arts, but very little demand exists for the local article. Deposits near the south-eastern border are practically inexhaustible, their colour varying from pure white to yellowish and brown. *See* note *under* Tripolite.

Politic Bore. *See under* Artesian Bores. No. 141.

Politician Mine, Sandy Cr., Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2233; Galena, 2942; Gold, 4038; Iron Pyrites, 5254; Steatite, 7691; Zinc Blende, 8150.

Polly's Cr., Emu Vale. *Min.Ref.* Kaolin, *see* 5682.

Pollygammon Bore. *See under* Artesian Bores. No. 432.

Pomona Rail. Stn. (3 or 4 miles from), on Tewantin-Gympie Road. *Min.Ref.* Coal, *see* 1829A.

Pompeii Claim, Thompson's Cr., S. of Watsonville. *Min.Ref.* Cassiterite, *see* 1146.

Pond Bores. *See under* Artesian Bores. No. 360.

Pontin's Mine, Hungry Hill. *Min.Ref.* Stibnite, *see* 7608.

Poor Stroller Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1112; Fluorspar, 2678.

Popahrairie P.A., Fiery Cr., Etheridge Goldfield. *Min.Ref.* Anglesite, *see* 21A; Cerussite, 1189A; Malachite, 6215A; Massicot, 6525A.

Populations. See under locality names. *See also under* Queensland.

Porcelain Clay. *Var. of* Kaolin, *which see.*

Porcelain Jasper. *Var. of* Jasper, *which see.*

Porcellanite. *Syn.* Porcelain Jasper.

Porchester Co. Burke Dist. *See map*, Pl. 20.

Porcupine Bore. *See under* Artesian Bores. No. 244.

—— Cr., 44 miles N.E. of Hughenden. *Min.Ref.* Coal, *see* 1598A.

Porphyry Cr., Sellheim Mineral Field. *Min.Ref.* Gold (alluvial), *see* 3293.

Port Alma. *See under* Rockhampton.

—— —— Reef, Raglan Goldfield. *Min.Ref.* Gold, *see* 4297; Kaolin, 5699.

Port Clinton—

Situation: *See maps,* Pls. 2, 3. About 64 miles N.byE. of Rockhampton. *Co.* Palmerston; *Dist.* Port Curtis. *Lat.*, 22° 30′ S.; *Long.*, 150° 47′ E.

Harbourage: The entrance to the port is easy. Depth of water at wharf is 18 ft. at L.W.S.

Mineral Reference: Coal, *see* 1801, 1802.

Geological Note: Coal Measures belonging to the Trias-Jura System occur to the south, resting on granite and a series of quartzites and other sedimentary rocks belonging to the Devonian System. The coal is the brown variety (lignite), and contains 10 per cent. of moisture and 7½ per cent of ash. *See under* Coal Analyses.

Geological Survey Publications: Report No. 174. *See under* Geol. Surv. Pub. List for title.

—— —— Coal Measures. *See* Waterpark Creek.

Port Curtis District—

Situation, Etc.: *See maps,* Pls. 2, 3. On the Tropic of Capricorn. Between *Lat.* 21° and 25°; *Long.* 149° and 152°. Bounded on the east by the Pacific Ocean; on the south by the Districts of Wide Bay and Burnett; on the west by the District of Leichhardt; and on the north-west by the District of South Kennedy. The principal rivers, with their tribs., are—St. Lawrence, Styx, Fitzroy (tribs. Dee, Don, and Callide), Calliope, and Boyne (trib. Eastern Boyne).

Area (in sq. miles): 14,054. With islands included, 14,370.

Principal Mining Centres: Gold and Mineral Fields—Canoona, Cawarral, Morinish, Ridgelands, Rosewood, Stanwell, Mt. Morgan (late Crocodile), Mt. Rainbow, Barmundoo (Tableland), Ulam, Langmorn, Cania and Kroombit (principal part), Calliope, Boyne, Mt. Larcombe, Fig-tree, Maxwelton, Uncle Sam, Eastern Boyne, Milton (Norton), Monal, Glassford Cr., Bompa, Rosedale, and Iron Is., *which see.* Coal Fields—Styx, Callide Cr., *which see.*

Counties:

Clinton Co.

Barmundoo (Tableland) Goldfield (*in part—see also* Raglan Co.), Bompa Goldfield, Calliope Goldfield, Diglum Cr., Eastern Boyne Prov. Goldfield, Fig-tree Prov. Goldfield, Glassford Cr. Mineral Field (Many Peaks Copper Mines, Bompa Silver-Lead Mines), Langmorn Goldfield (*in part—see also* Deas Thomson Co.), Maxwelton Goldfield, Milton (Norton) Goldfield, Monal Goldfield (*see also under* Rawbelle Co., Burnett Dist.), Mt. Hector Copper Mine, Mt. Larcombe Prov. Goldfield, Uncle Sam Prov. Goldfield, Round Mountain, Sneaker's Gully (Gold).

Deas Thompson Co.

Langmorn Goldfield (*principal part—see also* Clinton Co.) (Raglan, Targinie), Ulam Goldfield.

Flinders Co.

Rodd Peninsula, Rosedale Mineral Field.

Liebeg Co.

Canoona Goldfield, Marlborough, Princhester, Woodville.

Livingstone Co.

Cawarral Goldfield (Mt. Chalmers, Mt. Warminster, Mt. Wheeler, New Zealand Gully), Morinish Goldfield, Mt. Morgan (late Crocodile Cr.) Goldfield (*in part—see also* Raglan Co.), Ridgelands Goldfield, Rockhampton (Broadmount, Datum Point, Emu Park, Gracemere, Keppel Is., Lake's Cr., Mackenzie Is.), Stanwell Goldfield (*principal part—see also* Pakington Co.), Yaamba, Yeppoon.

Murchison Co.

St. Lawrence (Broadsound), Styx R. Coalfield, Clairview (Copper).

Port Curtis District—*continued:*

Pakington Co. (*in part—see also* Leichhardt Dist.).

Boolburra, Edungalba, Gainsford, Gogango, Rannes, Rosewood Goldfield, Stanwell Goldfield (*in part—see also* Livingstone Co.), Westwood.

Palmerston Co.

Duke Group, Northumberland Isles (Bamborough, Hunter, Iron, Marble, Mortar, Tynemouth Islands).

Pelham Co.

Cania and Kroombit Goldfield (*see also under* Rawbelle Co., Burnett Dist.)

Raglan Co.

Barmundoo (Tableland) Goldfield (*in part—see also* Clinton Co.), Callide Cr. Coalfield, Dee R. (gold nuggets), Don R., Dundee, Mt. Morgan (late Crocodile Cr.) Goldfield (*principal part—see also* Livingstone Co.), Mt. Rainbow Goldfield.

MINERAL REFERENCES AND STATISTICS: *See under* names of Principal Mining Centres.

Port Douglas—

SITUATION: *See maps,* Pls. 8, 9, 22. About 1,104 miles N.W. of Brisbane. *Co.* Nares; *Dist.* Cook. *Lat.*, 16° 29′ S.; *Long.*, 145° 27′ E.

PORT for Mt. Spurgeon and other Tin Mines.

HARBOURAGE: Dickson's Inlet is the harbour for the port. The bar has been dredged to give a depth of 10 ft. at L.W.S. The wharf has 15 ft. at L.W.S. Spring tides vary from 7 ft. to 8 ft.; neaps, 2 ft. to 4 ft.

MINERAL STATISTICS: Tin, *see tables,* Pls. 38, 46, 46A; Copper, Pls. 39, 46, 46A; Wolfram, Pls. 42, 46, 46A.

GEOLOGICAL NOTE: The rocks in and around the Port are of Gympie Formation (Permo-Carboniferous).

GEOLOGICAL PUBLICATIONS: *Nil.*

WARDEN: Stationed at Port Douglas. INSPECTOR OF MINES: Stationed at Herberton.

Port Glasgow, Brit. New Guinea. *Min.Ref.* Limestone, *see* 709.

Port Moresby, Brit. New Guinea. *Min.Ref.* Chalcedony, *see* 1366; Chert, 1414; Hornstone, 1394; Iron Pyrites, 5474; Limonite, 5928, 5929.

Port Newry—

SITUATION: *See maps,* Pls. 14, 15. The Port is about 30 miles N.W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Lat.*, 20° 50′ S.; *Long.*, 148° 55′ E.

HARBOURAGE: Port Newry affords a safe harbour for vessels, having a number of islands in the vicinity and an anchorage of over 5 fathoms. There is deep water close to the islands, but no wharf accommodation.

GEOLOGICAL NOTE: Permo-Carboniferous Coal Measures occur in the locality, although no seams of coal have been found in them.

Port Stewart—

SITUATION: *See maps,* Pls. 8, 9. 144 miles N.W. of Cooktown. *Co.* Sidmouth; *Dist.* Cook. *Lat.*, 14° 10′ S.; *Long.*, 143° 40′ E.

PORT for the Coen, Hamilton, and Rocky River Gold and Mineral Fields.

HARBOURAGE: Navigable for vessels of the smallest tonnage. Spring tides rise from 9 ft. to 10 ft.; neaps about 6 ft. Wharf is nearly dry at low water.

GEOLOGICAL NOTE: The casual examination made of this locality shows the prevailing rock to be granite.

Portal Cr. and The Gorge, Upper Burdekin. *Min.Ref.* Magnetite, *see* 6022.

Portland Boundary Bore. *See under* Artesian Bores. No. 153.

Portland Cement. *See under* Cement-making Materials for note. *Also under* Supplementary Reports, Nos. 138, 147.

—— Co. Mitchell Dist. *See map,* Pl. 18.

—— Downs Bore. *See under* Artesian Bores. No. 374.

Ports of Queensland. For Harbourage, etc., *see under* name of Port.

Bowen (Port Denison). *See maps,* on Pls. 16, 17.
Brisbane (Moreton Bay). *See maps,* on Pls. 6, 7.
Bundaberg (Burnett River). *See maps,* on Pls. 4, 5.
Burketown (Albert River). *See maps,* on Pls. 20, 21.
Cairns (Trinity Bay). *See maps,* on Pls. 8, 9, 22.
Cardwell (Hinchinbrook Channel). *See maps,* on Pls. 16, 17.
Cooktown (Endeavour River). *See maps,* on Pls. 8, 9.
Geraldton (Johnstone River). *See maps,* on Pls. 8, 9, 22.
Gladstone (Port Curtis). *See maps,* on Pls. 2, 3, 33, 34.
Lucinda Point (Hinchinbrook Channel). *See maps,* on Pls. 16, 17.
Mackay (Pioneer River). *See maps,* on Pls. 14, 15.
Maryborough (Wide Bay). *See maps,* on Pls. 4, 5.
Mourilyan. *See maps,* on Pls. 8, 9.
Normanton (Norman River). *See maps,* on Pls. 20, 21.
Port Clinton. *See maps,* on Pls. 2, 3.
Port Douglas. *See maps,* on Pls. 8, 9, 22.
Port Newry. *See maps,* on Pls. 14, 15.
Port Stewart. *See maps,* on Pls. 8, 9.
Rockhampton (Keppel Bay, Port Alma, Broadmount). *See maps,* on Pls. 2, 3, 33, 34.
St. Lawrence (Broad Sound). *See maps,* on Pls. 2, 3.
Thursday Island (Port Kennedy). *See maps,* on Pls. 8, 9.
Townsville (Cleveland Bay). *See maps,* on Pls. 16, 17.

Possession Island Prov. Goldfield, Torres Straits. Centre about *Lat.* 10° 43′ S.; *Long.* 142° 30′ E. *Statistics:* Included in "Other Goldfields." *Min.Ref.* Galena, *see* 2813; Gold, 3802; Iron Pyrites, 5087.

GEOLOGICAL NOTE: Porphyritic granite prevails throughout the field. Several gold-bearing quartz reefs, traversing the granite in all directions, are exposed on the surface, a number of which are large and well-defined, others being very small and irregular. *See* G.S.Q. Pub. No.180 for details.

Post Hole Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3492, 3494A; Hematite, 4693; Iron Pyrites, 4941; Limonite, 5799; Zinc Blende, 8057.

—— —— Lead, Capeville, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3272A.

Potallah Prov. Goldfield, Potallah Cr., 25 miles W.N.W. of Alice Goldfield. *Min.Ref.* Gold, *see* 3661.

Potash. Deposits containing potash in a soluble condition are not known in Queensland, the climatic conditions being unfavourable for their occurrence, but deposits of felspar occur in many places in granite country.

Potash Alum. *Syn.* Kalinite, *which see*

Potash Felspar. *Syn.* Orthoclase, *which see.*

Potash Mica. *Syn.* Muscovite, *which see.*

Potassium (K.). *Atom.Wt.* 39·10. *Sp.gr.* 0.88. *Colour,* silver-white.

MINERALS: *See* Nepheline, Orthoclase, Pinite, Kaolinite. *See* note under Potash.

—— silicates. *See under* Silicates.

—— sulphate. *See* Kalinite.

Potewka Bore. *See under* Artesian Bores. No. 177.

Potosi Mine, Irvinebank. *Min.Ref.* Hematite, *see* 4709; Limestone, 634.

—— Copper Lode, Mt. Perry. *Min.Ref.* Barytes, *see* 266; Copper Pyrites, 2129; Galena, 2720, 2721; Iron Pyrites, 4990; Zinc Blende, 8063.

Pott's Opal Mine, Mt. Margaret Run. *Min.Ref.* Opal (precious), *see* 6948D.

Pottery Clays. *See* under Kaolin, and notes under Clay.

Poverty Gully, Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

Power (F. Danvers).

Report on South Glanmire and Monkland Mine, Gympie. Q.G.M.J., vol. 5, pp. 386-389 (1904).

Powne's Selection Bore. *See under* Artesian Bores. No. 255.

P.P. (1), Wetheron, W. of Maryborough. *Min.Ref.* Jasper, *see* 5637.

"P.R." Bore. *See under* Artesian Bores. Nos. 132, 229.

Prairie, 28 miles E. of Hughenden. *Min.Ref.* Coal, *see* 1709D. Geol. Report—G.S.Q. Pubs. Nos. 108, p. 5 (1895), 121, p. 6 (1898).

—— Bores. *See under* Artesian Bores. Nos. 44, 144, 413.

—— Creek Bores. *See under* Artesian Bores. Nos. 229, 271, 395.

—— Flower Mine, Mareeba Goldfield. *Min.Ref.* Gold, *see* 3776.

Prase. *Var. of* Chalcedony, *which see.*

Pratten. A township on the Talgai Goldfield, and about 18 miles N.W.byW. of Warwick.

Precious Stones. *See* Gemstones.

Prehnite. *Compo.*, Hyd. silicate of alumina and lime. *Colour*, light green shades. *Lustre*, vitreous. *H.* = 6-6·5. *Sp.gr.* = 2·80-2·95.

7075. ——. *Assoc.with* Copper (native). *Loc.* 4 miles from Sonoma Stn., Coral Cr., Bowen R., 54 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* B.D.

7076. ——. Pelican Cr., 50 miles S.W. of Bowen, Bowen R. Coalfield. *Co.* Salisbury; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 4, p. 6 (1879).

7077. ——. *Assoc.with* Copper carbonate, in altered volcanic rock. *Loc.* Strathmore Cr., br. of Bowen R., 55 miles S.W. of Bowen, Bowen R. Coalfield (*ante*). *Ref.* G.S.Q. Pub. 3, p. 44 (1879).

Premier Reef, Hillsborough (8-Mile), Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2925; Gold, 4012; Iron Pyrites, 5236A.

Prentice Bros. Silver Mine, Silverfield. *Min.Ref.* Galena, *see* 2778.

President Reef, Twelve Mile, Croydon Goldfield. *Min.Ref.* Galena, *see* 2711C; Gold, 3555.

Prickley Bore. *See under* Artesian Bores. No. 379.

—— Bush Bore. *See under* Artesian Bores. No. 324.

Pride of Gebangle Mine, Gebangle Goldfield. *Min.Ref.* Gold, *see* 3580; Ironstone, 5509.

—— of the Hills Opal Mine, Paroo Mineral Field. *Min.Ref.* Opal (precious), *see* 6960.

—— —— (Homeward Bound) Reef, Croydon Goldfield. *Min.Ref.* Felspar, *see* 2625; Gold, 3526.

—— —— West Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 912; Serpentine, 7383.

Primrose Extd. M.C. (267), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2092; Limonite, 5783; Malachite, 6144.

Prince of Wales Island, 1 mile S.W. of Thursday Is., Torres Straits. *Min.Ref.* Gold, *see* 3824.

—— —— Mine, Argentine Silver Field. *Min.Ref.* Cerussite, *see* 1278; Galena, 2992; Minium, 6624.

—— ——, Gum-tree Flat, Talgai Goldfield. *Min.Ref.* Gold, *see* 3853.

—— Patrick Reef, Jessop's Hill, Palmer G.F. *Min.Ref.* Gold, *see* 3672.

Princhester, 44 miles N.W. of Rockhampton. *Lat.*, 22° 56′ S.; *Long.*, 150° 2′ E. *Min.Ref.* Asbestos, *see* 109, 110; Chrysoprase, 1390; Chromite, 1481; Chrysocolla, 1535; Cuprite, 2476; Gold, 4316; Muscovite, 6895; Nickel, 6907.

Principal Mining Fields. *See under* Antimony, Coal, Copper, Gold, Opal, Sapphire, Silver-Lead, Tin, and Wolfram Fields.

Pring Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 381.

—— Co. Darling Downs Dist. *See map*, Pl. 12.

Proa Bore. *See under* Artesian Bores. No. 326.

Problem Mine, Croydon Goldfield. *Min.Ref.* Gold, *see* 3559; Marcasite, 6499.

Proclamations—

The following gold and mineral fields have been officially proclaimed in the *Queensland Government Gazette.* Details are given under separate heading :—

Agate Downs G.F.
Alice River (Philp) G.F.
Allandale G. and M.F.
Anakie M.F.
Balcooma G.F.
Barmundoo (Tableland) G.F.
Bompa G.F.
Boolboonda G. and M.F.
Bowden M.F.
Bower Bird G.F.
Burketown M.F.
Calliope G.F.
Canal Creek G.F.
Cania and Kroombit G.F.
Canoona G.F.
Cape River G.F.
Carrington G.F.
Cawarral G. and M.F.
Charters Towers G.F.
Chillagoe G. and M.F.
Chowey G.F.
Clermont G.F.
Cloncurry G. and M.F.
Coen G.F.
Cooktown M.F.
Croydon G.F.
Cunnamulla M.F.
Duchess G. and M.F.
Eidsvold G.F.
Eidsvold Extended G.F.
Enoggera G.F.
Etheridge G.F.
Eungella G.F.
Gaeta G.F.
Glassford Creek M.F.
Glastonbury G.F.
Grasstree G.F.
Green Hills G.F.
Gympie G.F.
Hamilton G.F.
Herberton G. and M.F.
Hodgkinson G.F.
Horn Island G.F.
Jimna G.F.
Jordan Creek G.F.
Kangaroo Hills M.F.
Kilkivan G. and M.F.
Langmorn G. and M.F.
Leyburn G.F.
Lucky Valley G.F.
Mareeba G.F.
Marodian G.F.
Maxwelton G.F.
Milton (Norton) G.F.
Monal G.F.
Morinish G.F.
Mt. Cannindah M.F.
Mt. Flora G. and M.F.
Mt. Morgan G.F.
Mt. Oxide G. and M.F.
Mt. Rainbow G.F.
Mt. Shamrock G. and M.F.
Mt. Spencer G. and M.F.
Mt. Wyatt G.F.
Mulgrave G.F.
Nanango G.F.
Nebo (Mt. Britton) G.F.
Normanby G.F.
Oaks G. and M.F.
Opalton M.F.
Palgrave G.F.
Palmer G.F.
Paradise G.F.
Paroo M.F.
Perry G.F.
Piccadilly G.F.
Pikedale G.F.
Ravenswood G.F.
Reid's Creek G.F.
Ridgelands G.F.
Rocky River G.F.
Rosedale M.F.
Rosewood G.F.
Russell G.F.
Russell Extended (Towalla) G.F.
Sellheim M.F.
Springs Rush Extd. G.F.
St. John's Cr. G.F.
Stanthorpe M.F.
Stanton-Harcourt G.F.
Stanwell G.F.
Star River (Argentine) M.F.
Starcke Nos. 1 and 2 G.F.
Strathalbyn G.F.
Talgai G.F.
Tenningering (Mt. Perry) G. and M.F.
Thane's Creek G.F.
Ulam G.F.
Windsor Extended G.F.
Woolgar G.F.
Yabba G.F.
Yatton G.F.

Prodigal Copper M.L. (490), Cloncurry. *Min.Ref.* Limonite, *see* 5863; Malachite, 6261; Tile Ore, 2555.

Proprietary Tin Mines, Smith's Cr., Nymbool. *Min.Ref.* Cassiterite, *see* 1142; Copper Pyrites, 2215; Zinc Blende, 8114. *See also under* Govt. Ming. Jour., Report No. 13.

7077A. **Prosopite.** *Compo.*, Hyd. fluoride of alumina and calcium. *Colour*, snowy-white. Translucent. Granular massive. *H.*, 4½. *Sp.gr.*, 2·7. *Analysis:* Fluorine, 31·6; Aluminium, 15·9; Calcium, 16·3; Sodium, trace; Silica, 11·9; H_2O at 100° C., trace; Combined H_2O, 13·0 per cent. *Note.*—Mineral evidently "partly kaolinised" (F. E. Connor). *Assoc.with* Green Fluorspar. *Loc.* Devon Mine, Coolgarra. *Co.* Cardwell; *Dist.* N. Kennedy. *Ref.* Dr. Edlinger.

Prospecting Coastal Coal Deposits. *See under* Supplementary Reports, No. 137.

Prospecting for Minerals in Queensland—

REQUIREMENTS: Beyond the actual tools for mining, a tent for sleeping in, and utensils for cooking purposes, very little is required. A geographical map of the district is useful, and may be obtained from the Lands Department in Brisbane. Geological and mineral reports on various localities are issued by the Geological Survey Office. A compass is also useful, but is seldom seen with prospectors, as they are accustomed to find their position by the sun or by characteristic features of the bush. In examining country, a prospector generally travels on foot, and carries his "swag." Sometimes he requisitions a barrow or hand truck, more frequently he has one or two horses, and at times a horse and dray.

TEXT-BOOK AND BLOWPIPE: A book about simple minerals and a small set of blowpipe appliances would be very useful to the prospector. Not one per cent. of those who are prospecting have any knowledge of how to test minerals, and yet the knowledge is very easily acquired. Queensland is so prolific in minerals that, without a knowledge of mineralogy, a prospector's chances of finding valuable deposits are very much less than they would be with that knowledge, and perhaps it would be no exaggeration to state that a prospector who is a mineralogist with a bush experience would be about equal to ten prospectors who know nothing about mineralogy. In an area where both would be prospecting the field mineralogist would discover valuable features which the other would pass over nine times out of ten.

GOLD PROSPECTING: In alluvial mining as well as in reef prospecting, to mate with a man of experience is the first desideratum. Tin dish, pick and shovel, and small pestle and mortar (dolly pot) are necessary, and when alluvial gold is found a "cradle" or a "wet-jigger" will be required, the latter being more commonly used in late years. Sluice boxes are also used where timber is available and water plentiful. When water is scarce, but other conditions being favourable—*i.e.*, the gold coarse wash not clayey, &c.—the Queensland miner sometimes uses a "dry blower," several types of which are on the market, or he may use a dry jigger made up of a frame of sieves of his own construction, on which the gold is caught, and which is cleaned by "dry washing," using the wind to separate the gold from impurities by dropping the dust from one dish to another, or throwing it up in the wind and catching it again in the same dish. In reef prospecting the pestle and mortar and dish are indispensable for crushing and reducing the samples, but the actual value of the stone, although thus gauged approximately, can only be accurately determined by carefully weighing the sample and the resulting concentrate of gold or gold-bearing mineral, an operation the prospector has no conveniences for doing. When stone is mineralized, and if the prospector is not expert at testing it, an average sample is sent to the Geological Survey Office. (*See* Assaying Samples for Prospectors.)

TIN PROSPECTING: *See* note above on Gold Prospecting, which generally apply to tin prospecting. The prospector uses a dish or shovel in testing a sample of wash-dirt for alluvial tin, and, if satisfied that the ore is present in payable quantities, he generally stacks the dirt in heaps until the "wet season" arrives, when the accumulation of months is cleaned up in a week or so. His appliances are roughly-made sluice boxes or "wet-jiggers." Tin prospecting in the "dry season" is carried on by "dry blowers," as with gold, although the arrangement for saving the mineral has to be varied. In lode tin-mining the pestle and mortar, or a flat-iron sheet (or shovel) and hammer, are used for crushing samples, and after cleaning with water, the amount of tin present can fairly well be determined. Complex ores are forwarded to the Geological Survey Office, Brisbane, for examination.

COPPER PROSPECTING: In this, as in all other classes of mineral prospecting, a study of the geological features of the country is useful, and a knowledge of copper-bearing minerals is a distinct advantage, while the possession of a rough method of approximately determining the percentage of copper, the details of which cannot be entered into here, enables a prospector to gauge the value of any discovery he makes.

Prospecting for Minerals in Queensland—*continued:*

WOLFRAM PROSPECTING: Those prospecting for tin also acquire a knowledge of the mode of occurrence of wolfram, as the two minerals are often found in the same class of country, and sometimes in the same lode. The novice should acquire specimens of wolfram and those minerals which closely resemble it, as some iron ores are easily mistaken for wolfram and very liable to mislead. Geological features are important to study, also minerals associated with wolfram, but after some experience in wolfram-bearing country, the prospector can identify the mineral very quickly, and pick out the lodes which are likely to contain it.

MOLYBDENITE PROSPECTING: Molybdenite is a common associate of wolfram, and once seen can always be identified afterwards. All prospectors look for molybdenite at the same time they are searching for wolfram.

SILVER AND SILVER-LEAD PROSPECTING: The general remarks about copper prospecting applies also to silver-lead. Indeed, a prospector in Queensland, to be well-equipped, wants to have a good general knowledge of all minerals of commercial value, as half a dozen valuable minerals might be found in the same locality, and even in the same mine. Many rich silver-bearing lodes give no surface indication of being valuable, and even experienced prospectors sometimes overlook such deposits. If in doubt the samples should be assayed.

SAPPHIRE PROSPECTING: Prospecting for sapphires is very much like prospecting for alluvial gold, both minerals being found under identical conditions, even the methods of treating the wash being much the same. Some classes of deposits permit of dry concentration by sieving, the sapphires being picked out by hand from the stones associated with them. "Sapphire Fields of Anakie" is a descriptive report of the only working mines in the Commonwealth. *See under* "Geological Survey Publications."

OPAL PROSPECTING: Geological features are to be closely studied by the prospector, and an examination of an opal mine in Western Queensland is about the only way to get a knowledge of the work. There are several kinds of opal deposits, but the mode of occurrence varies but little. A few chips of the various kinds of opal is useful for comparative purposes. The disposal of opal is effected by sending it under offer to recognised dealers in the cities of the Commonwealth, or by selling it direct to dealers or their agents visiting the field. The miners sometimes visit the cities, and there find buyers of the opal in small or large parcels. "The Opal Fields of Queensland" is a descriptive report on the Western Opal Fields. *See under* "Geological Survey Publications."

COAL PROSPECTING: Most of the important coal deposits have been discovered by accident, but some have been the result of careful search. The geological features of coal measures must be understood when looking for coal, and a geological map of the State, or portions of it, will be of advantage to him. The prospector should also have some knowledge of the effects of weathering agencies on coal, as good seams of coal may occur and yet give no indication of their quality on the outcrop. The Geological Survey Office can give him information about any district he desires to prospect, and also the local geological features he may expect to meet with. Samples carefully taken are tested by the Geological Survey Office free of cost to bonâ fide prospectors. *See further notes under* Coal.

LOW GRADE DEPOSITS: Some experience is required in estimating the values of large low-grade deposits of gold, tin, etc. In alluvial mining the general method is to test the ground by a preliminary sampling of the surface. Then quantities and values are determined by systematic boring, and by assays. In large lodes or formations of low-grade ore the installation of expensive plant is necessary for economic treatment, so the sampling and the determination of quantities have to be carried out most carefully. The prospector may find a low-grade deposit, but it is generally left to the geologist or mining engineer to determine its potentialities.

RARE METALS AND MINERALS: The Geological Survey Office furnishes prospectors with all information concerning rare metals and minerals, and frequently is able to supply him with small chips for reference purposes. The same office will supply him with the latest market quotations, and can generally place him in communication with dealers, agents, or buyers.

Prospecting for Minerals in Queensland—*continued:*

MINERAL LOCALITIES: Information concerning localities can be obtained from the text of this Index under the names of the minerals or of the localities, and also from a study of the accompanying maps. Some of the maps show the districts, counties, and other geographical features of the State; others give the details of the principal mining fields, together with geological and mineral notes. The publications of the Geological Survey Office may also be consulted, and information acquired since the publication of this work can be obtained from the officers. There are only a few fields in Queensland where the mining industry has reached its maximum development, or where operations have been discontinued on account of the ore deposits being exhausted. Many fields have been worked for a time, then abandoned, and perhaps after an interval of some years, have sprung into activity again. It is, therefore, difficult to know where operations might not be successful, even though undertaken on fields which have been worked previously. There is an immense number of localities, however, which have not been prospected at all, or only in a casual manner, and are available to those who desire to undertake the labour or entail the cost of examining them. For the individual miner the opal field of Western Queensland and the sapphire field of Anakie are available, both requiring less experience to become successful than any other class of mining in the State, with the additional inducement, to some, that nearly every man is his own master. The mineral fields of Chillagoe and Herberton are also areas where individual mining is carried on to a great extent, and where parties of a few men work together for years, and where discoveries are constantly being made by men who go out into parts of the bush not previously prospected. The country on the east side of Cape York Peninsula is very little known, but its general geological features indicate that discoveries of gold, tin, wolfram, copper, mercury, and coal may be anticipated. To prospect this part of the State, however, requires capital, as equipment and sustenance are necessary for, perhaps, twelve months at a time. In the Etheridge District, and in the country towards Croydon, vast areas of country carry copper, gold, and other minerals, but they have only been partly examined. A railway recently constructed across this area will considerably aid in its future development. The coal areas along the eastern coast, other than those at Ipswich and Burrum, have only been cursorily examined, and might develop into productive fields sooner or later. The Dawson-Mackenzie Coalfields of Central Queensland are as large in size as the whole of England, and contain thousands of square miles of splendid coal country waiting to be opened up. A railway to one of the coal areas is now under construction. Then there is the Burnett District, with its gold and copper-bearing deposits, Wide Bay its coal measures, and Mt. Bopple its beds of graphite, all waiting development, while further south are the coal beds about the Brisbane River and about Beaudesert, and the tripolite deposits near the southern border. Around Rockhampton deposits of chromite, asbestos, and phosphate of lime are to be found, the latter occurring as an impregnation in old quartzites on the coast, and as recent guano deposits in limestone caves. There is a large amount of investigation to be undertaken by the analytical chemist in connection with the classification of minerals and the identification of rare mineral species and varieties. This work cannot be taken in hand by the limited staff of the Geological Survey, and yet it ought to be done. Summarising the general prospects of Queensland from a mineral point of view, no hesitation is felt in stating that Queensland possesses great opportunities for the practical miner and for the speculator who finances prospecting work, besides offering a splendid field for the researches of the scientific observer.

Details of all the places where the search for minerals might be carried on cannot be mentioned here, but references are made under the various locality and mineral names.

PERMIT TO PROSPECT: This is required for all Crown lands. A "Miner's Right" and a copy of the Mining Act, and also any information about taking up ground for mining purposes, can be obtained from any warden's office, or direct from the head office of the Department of Mines.

REWARDS FOR DISCOVERIES: Rewards for the finding of new gold and mineral fields are provided for, the conditions of which are laid down in the "Mining Act and Regulations." *See also under* Rewards for Discovery of New Goldfields.

Prospecting for Minerals in Queensland—*continued:*

DISPUTES WITH OTHER PROSPECTORS: These matters are usually settled by the warden of the district where the mining operations are being carried on. *See under* name of locality for the address of the warden.

ACCIDENTS: In case of accidents, the Inspector of Mines belonging to the district is communicated with, who examines the mine, and finds out the cause of the accident. At the inquiry held afterwards the Warden of the district makes certain recommendations for the consideration of the Minister of Mines as to what action should next be taken. The Inspector also examines the mines periodically to see that all the conditions stipulated in the Mining Act concerning the safety of miners are fulfilled.

PRIVATE ASSISTANCE: Many prospectors receive monetary aid from men with capital, or receive rations from storekeepers or the owners of stations, and a large amount of good work has been accomplished by the assistance thus rendered. If the assisted prospector finds a payable deposit, the capitalist and the prospector participate, it may be equally, in the profits which may result from the sale of the mineral.

FLOTATION OF MINES: If the prospector, working with or without assistance, discovers a valuable lode, he communicates with speculators, and a sale or "float" is arranged on mutually satisfactory terms. Frequently the proceeds of the discovery will enable the miner to employ other men, and to place machinery on the mine to carry on the work without financial assistance, and in this way many gold or mineral mines have been developed.

On the other hand, a prospector, working by himself, or in conjunction with others, discovers a lode which requires a large amount of capital to economically work it, and if he knows of no one willing to take in hand the flotation of the mine, the Secretary of the Stock Exchange of the town nearest to him can give him the names of brokers who will undertake the work, provided the discovery, on the report of some one of authority, is found to be a valuable one. *See under* "Stock Exchanges of Queensland," and "Chambers of Commerce" for localities where these institutions are established.

GOVERNMENT ASSISTANCE: Provision is made every year by Parliament for assisting, by monetary grants, the opening up of mines in new localities or the deeper sinking of mines on established fields. Every assistance is given by the Government to encourage developments in the mining of coal, gold, tin, copper, or other well-known minerals, and also for the discovery of and working of rare metals and deposits of substances (such as asbestos or tripolite) which might be useful for industrial purposes. Up to June, 1912, £34,745 has been spent in assisting prospecting and £80,702 in deep-sinking. *See* details of this *under* "Subsidies."

Prospecting for Mineral Oil. General Notes. *See under* Supplementary Reports, No. 148.

Prospecting in the York Peninsula. (Tour of Mr. Dickie.) *See under* Govt. Ming. Jour., Report No. 111.

—— Lode, 1 mile E. of Messenger's Sel., W.S.W. of Kilkivan. *Min.Ref.* Cinnabar, *see* 1558, 1561.

Prospector's Cr., trib. of Leichhardt R., Cloncurry. *Includes* Mt. Metallic, Centipede, Surprise Groups of Copper Mines, *which see. Min.Ref.* Copper (native), *see* 1988; Copper Pyrites, 2115, 2116; Cuprite, 2416; Iron Pyrites, 4969, 4970; Jasper, 5635, 5636; Limonite, 5745, 5805, 5821, 5822; Malachite, 6163, 6183, 6184; Redruthite, 7267, 7268; Tenorite, 7712; Tile Ore, 2538.

—— Cr., Oakey Cr., Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1161; Magnetite, 6021; Topaz, 7804.

—— Gully, Starcke Goldfield. *Min.Ref.* Gold (alluvial), *see* 3200B.

—— ——, The Springs, Clermont. *Min.Ref.* Gold (alluvial), *see* 3347.

—— ——, Top Camp, McMaster's, Clermont. *Min.Ref.* Epsomite, *see* 2617; Gold (alluvial), 3279; Iron Pyrites, 5316; Magnesite, 5948; Marcasite, 6515.

—— M.C. (182), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2078; Limonite, 5762; Malachite, 6115; Redruthite, 7222; Tile Ore, 2508.

—— Samples. *See under* Assaying Mineral Samples.

Proustite. *Syn.* Ruby Silver Ore. *Compo.*, Arseno-sulphide of Silver. *Colour*, cochineal-red. *H.* = 2-2·5. *Sp.gr.* = 5·57-5·64. *Contents* (*max.*), Silver 6 per cent.

7078. ——. Muldiva Silver-Lead Mines, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 50 (1900).

7078A.—— (Ruby silver). Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs..** *Ref.* A.R.D.M., p. 109 (1902).

Providence Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Psilomelane. *Compo.*, Hyd. oxide of manganese. *Colour*, iron-black. Dull. *H.* = 5-6; *Sp.gr.* = 3·7-4·7. *See notes under* Manganese for uses.

7079. —— As large isolated masses. *Loc.* Between Chinaman and Duck Creeks, about 28 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 5 (1883). *Contents* (*average*), Manganese 55 per cent.

7080. ——. *Assoc.with* Azurite and Malachite, in gossan. M.L. No. 16, Perry Scrub, St. Agnes Cr., 15 miles S. of Gin Gin Rail. Stn. (Mt. Perry line), 34 miles (by rail and road) S.W. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 184, p. 13 (1903).

7081. ——. In reef 4 ft. wide, nr. Reid's Cr., 4½ miles S.W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* B.D.

7082. ——. Hawkwood, *viâ* Chinchilla, 48 miles W.S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* Burnett. *Ref.* B.D.

7083. ——. *Assoc.with* Pyrolusite. *Loc.* Laura R., Palmer Goldfield, 67 miles (by rail) W.byS. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* L.B. 2, p. 539 (1890).

7084. ——. Left-hand branch of Palmer R., 4 miles N.W.byW. of Maytown, Palmer Goldfield. *Co.* Chelmsford; *Dist.* Cook. *Ref.* O.R.

7085. ——. Hambleton Plantation, 7 miles S.S.W. of Cairns. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.M.

7086. ——. Timber Reserve, Pikedale Goldfield, 20 miles N.W.byN. of Stanthorpe *Co.* Bentinck. *Dist.* **Darling Downs..** *Ref.* B.D.

7087. ——. *Assoc.with* Manganese-dioxide (as Wad), Pyrolusite and Limonite. *Loc.* S. of Pikedale Hotel, 11 miles W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 95 (1898).

7088. ——. *Assoc.with* Pyrolusite. Mt. Gammie, Thane's Cr. Goldfield, 21 miles W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs.

7089. ——. *Assoc.with* Wad. *Loc.* Horse Cr., 50 miles S.S.W. of Cloncurry. *Co.* Merlin; *Dist.* **Gregory North..** *Ref.* P.R.S.Q., vol. 4, p. 62 (1887).

7090. ——. Greasy Bill's Reef, Pyramids or Seventy-mile Diggings, 3½ miles N.N.E. of Mt. Leyshon, 19½ miles (by road) S. of Charters Towers. *Co.* Davenport; *Dist.* **Kennedy North.** *Ref.* G.S.M.

7091. ——. *Assoc.with* Gold, Ironstone, Epsomite, and Marcasite, in alluvial deposits. *Loc.* Paterson's Claim, McMaster's (Top Camp), 14 miles N.W.byW. of Clermont. *Co.* Dickson; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 201, p. 63 (1906).

7092. ——*Assoc.with* Gold, in alluvial deposits. *Loc* Wild Cat Lead, 1 mile S. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 201, pp. 75-78 (1906).

7093. ——. Impregnating clay slate. Balcomba Range, 24 miles N. of Duaringa Rail. Stn. (Central line), 90 miles (by rail and road) W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 155 (1901).

7094.——. Nr. Pine Mountain, 7 miles (by rail) N.N.W. of Ipswich, and 31 miles (by rail) W.S.W. of Brisbane. *Co.* Churchill; *Dist.* **Moreton.** *Ref.* G.S.M.

7095. ——. In irregular masses. Mt. Crosby, 12 miles W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* B.D.

7096. ——. Beenleigh, 24 miles (by rail) S.E. of Brisbane (South Coast line). *Co.* Ward; *Dist.* Moreton. *Ref.* P.R.S.Q., vol. 4, p. 6 (1887).

7097. ——. Auckland Point, Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.M.

7098. ——. Biondella Hill, 3½ miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 21, p. 1 (1885).

7099. —— (massive). Boat Creek Workings, between Targinie Cr. and Calliope R., 7 miles W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.M.

7100. ——. *Assoc.with* Pyrolusite. *Loc.* Mt. Millar Mine, 6 miles W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.M.

7101. ——. In quartzose slates. Round (One Tree Hill) Hill, 2 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 21, p. 1 (1885).

7102. ——. Ridgelands Goldfield, 20 miles N.W. of Rochampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* O.R.

7103. ——. *Assoc.with* Rhodonite. Pors. (856, 917, 1033), Walla, 5 miles S.S.W. of Gin Gin Rail. Stn. (Mt. Perry line), 34 miles (by rail and road) W. of Bundaberg. *Co.* Bowen; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 189, p. 5 (1904).

7104. ——. Kholo Flat, Running Cr., 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.M.

7105. ——. *Assoc.with* Pyrolusite, in large lode. *Loc.* Pie Creek, W. of Por. 1335, Par. of Glastonbury, 10½ miles S.S.W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Assay:* Manganese-dioxide by available oxygen = 79·0 per cent.; total Manganese = 52·8 per cent.

7106. ——. Armstrong's Sel., Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.M.

7107. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, and Limonite, in quartz reef. *Loc.* Caledonia Claim, Sudest Is., 448 miles E.S.E. of Port Moresby, Brit. New Guinea. *Ref.* G.S.Q. Pub. 85, p. 29 (1892).

——. *See also* Manganese-dioxide, Manganese Ore.

——. **Wad** (*var.*). Friable. Black. Dull. Formed from the other Manganese minerals.

7108. —— ——. *Assoc.with* Cuprite, Malachite, Ironstone, and other Manganese Ores, in lode. *Loc.* Mountain Home Copper Mine, Mt. Norma, 17 miles S.E. of Cloncurry. *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* P.R.S.Q., vol. 4, p. 62 (1887).

7109. —— ——. *Assoc.with* Pyrolusite, Psilomelane, and Limonite, in beds. *Loc.* S. of Pikedale Hotel, Pikedale, 11 miles W. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, p. 95 (1898).

7110. —— ——. *Assoc.with* Psilomelane. *Loc.* Horse Creek, trib. of Cloncurry R., 5 miles S.S.W. of Cloncurry. *Co.* Merlin; *Dist.* **Gregory North.** *Ref.* P.R.S.Q., vol. 4, p. 62 (1887).

7111. —— ——. In small irregular deposits. *Loc.* Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 58 (1904). *See also under* Manganese-dioxide.

Public Service Officers. *See* list of classified and unclassified officers, published annually. Contains list of all professional and clerical officers of the Departments with age, date of appointment, salaries, etc.

Publications Examined in the Compilation of this Work—*See under* References.

—— of the Mines Department. *See under* Department of Mines.

—— of the Queensland Geological Survey. *See* Geological Survey Publications.

Puckley's Creek, trib. of Normanby R. Crosses Cooktown to Laura Railway line at 37 miles W. of Cooktown. *Min.Ref.* Coal, *see* 1607.

Pugh's (Rev. St. John) Sub-artesian Bore. *See under* Artesian Bores. No. 436.

Pumpkin Gully Mining Centre, 12 miles E. of Cloncurry. *Includes* Homeward Bound, Eagle Hawk, and Monakoff Groups of Copper Mines. *Min.Ref.* Azurite, *see* 156; Bismuth (native), 323; Bornite, 413; Chalcostibite, 1408; Chrysocolla, 1491; Copper carbonate, 1872, 1873; Copper (native), 1978; Copper Pyrites, 2064; Cuprite, 2390-2392; Gold (alluvial) 3172, (reef) 3454-3457; Ironstone, 5484; Malachite, 6081, 6087; Redruthite, 7208; Siderite, 7400; Tetrahedrite, 7752, 7753; Tourmaline, 7812.

—— —— and Fisher's Cr. (between) (Uncle Tom Reef), 12 miles E. of Cloncurry. *Min.Ref.* Calcite, *see* 450; Gold, 3456; Hematite, 4673; Siderite, 7401; Tourmaline, 7813.

Pumpkin's Claim, Black Ridge, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3305; Hematite, 4765.

Purari Mt., Brit. New Guinea. *Min.Ref.* Limestone, *see* 710.

Purari River, Gleeson Is., Brit. New Guinea. *Min.Ref.* Gold, *see* 3421A; Magnetite, 6064.

—— —— (Camp 120 miles up), Brit. New Guinea. *Min.Ref.* Limestone (fossiliferous), *see* 737.

—— —— (136 miles up), Brit. New Guinea. *Min.Ref.* Coal, *see* 1834; Limestone, 711; Limestone ((fossiliferous), 738.

Purga Bores (no record). *See* Ipswich Coalfield, *under* Coal Bores.

—— Colliery, 6 miles S. of Ipswich. *Min.Ref.* Coal, *see* 1743B.

Puzzling Gully Sub-artesian Bore. *See under* Artesian Bores. No. 288.

Pyles' (Matilda) Antimony Mine, Northcote, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3758; Stibnite, 7621.

Pyramid Hill, Banks Is., Torres Straits. *Min.Ref.* Gold, *see* 3824A; Silver, 7468A.

—— Silver Lease, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2935; Zinc Blende, 8154.

—— —— Mine, Sellheim Mineral Field. *Min.Ref.* Anglesite, *see* 60; Cerussite, 1291; Galena, 3016; Iron Pyrites, 5319; Ironstone, 5592; Minium, 6635; Zinc Blende, 8171.

Pyramids (or Seventy Mile) Diggings, 3½ miles N.N.E. of Mt. Leyshon. *Min.Ref.* Galena, *see* 2923; Gold, 3983-3986; Hematite, 4735; Iron Pyrites, 5223, 5224; Psilomelane, 7090; Pyrrhotite, 7160; Silver, 7481.

Pyrargyrite. *Syn.* Dark Red Silver Ore. *Compo.*, Sulphide of silver and antimony. *Colour*, blackish. *Lustre*, metallic. *Streak*, purple, red. *H.* = 2·5; *Sp.gr.* = 5·77-5·86. *Contents (max.)*, Silver 60 per cent.

7112. ——. Day Dawn Silver Mine, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe line). *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M.

7113. ——. Paisley Silver Mine, Muldiva, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line). *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

7114. ——. *Assoc.with* Gold, Galena, Cerussite, Iron Pyrites, Copper Pyrites, Cuprite, Tile Ore, Malachite, Azurite, Zinc Blende, Smithsonite, Ironstone, and Calcite, in lode. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pubs. 120 (1898), and 191 (1904).

Pyreneite. *Var of* Andradite, *sub-var. of* Garnet, *which see.*

Pyrites. *See* Copper Pyrites, Iron Pyrites, Marcasite (White Iron Pyrites), Lollingite (Prismatic Mispickel), Mispickel (Arsenical Pyrites), Pyrrhotite (Magnetic Pyrites), Stannite (Tin Pyrites).

Pyrolusite. *Compo.*, Manganese-dioxide. *Colour and Streak*, black, bluish black. *Lustre*, metallic. *H.* = 2-2·5; *Sp.gr.* = 4·82. *See note under* Manganese for uses. *Contents (max.)*, Manganese 63 per cent.

7115. ——. *Assoc.with* Hematite. *Loc.* Police Cr., trib. of Gregory River, 90 miles S.S.W. of Burketown. *Co.* Gregory; *Dist.* **Burke.** *Ref.* P.R.S.Q., vol. 4, p. 60 (1887).

7116. ——. *Assoc.with* Psilomelane, Laura River, 67 miles (by rail) W.byS. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* L.B. 2, p. 539 (1890).

7117. ——. Macrossan Mine, between Cathedral Range and Arbinjoe Cr., 2 miles E. of Chillagoe, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 58 (1900).

7118. ——. Griffith Mine, 2 miles S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 58 (1900).

7119. ——. Queenslander Mine, nr. Mt. Redcap, 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 58 (1900).

7120. ——. *Assoc.with* Manganese-dioxide (as Wad), Psilomelane, and Limonite. *Loc.* S. of Pikedale Hotel, 11 miles W. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 95 (1898).

7121. ——. (massive, stalactitic, and crystalline). In ferruginous clay. *Loc.* Leyburn Goldfield, 28 miles W.byN. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* P.R.S.Q., vol. 4, p. 61 (1887).

7122. ——. *Assoc.with* Psilomelane. Mt. Gammie, Thane's Cr. Goldfield, 21 miles W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 40, p. 3 (1887).

7122A.——. Mackunda Cr., Boulia Road, about 84 miles W.S.W. of Winton Rail. Stn. (Northern line). *Co.* Brighton; *Dist.* **Gregory North.** *Ref.* G.S.M.

7123. ——. Head of Mt. Leyshon Gully, 16 miles S. of Charters Towers. *Co.* Davenport; *Dist.* **Kennedy North.** *Ref.* B.D.

7124. ——. *Assoc.with* Cerussite, Chrysocolla, Galena, Gypsum, and Calcite, in garnet rock. *Loc.* Mt. Moss S. Lease (168) (Elsie's Shaft), Kangaroo Hills Mineral Field, 4 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Assay: See.* No. 2971. *Ref.* G.S.Q. Pub. 82, p. 3 (1897).

7125. ——. *Assoc.with* Cerussite, Siderite, and Ironstone. *Loc.* Struck Oil Silver-Lead Mine, Star R. (Argentine) Silver Field, 50 miles (by coach) N.W. of Ravenswood Junction (Gt. Northern line). *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

7125A.——. In lode. Nr. Coolan's P.A., Mt. Wyatt Goldfield, about 60 miles S.S.E. of Ravenswood. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* G.S.M.

7126. ——. About 15 miles S.E. of Inglewood, 50 miles S.W. of Warwick. *Co.* Clive; *Dist.* **Moreton.** *Ref.* O.R.

7127. ——. Brookfield, 10 miles W. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.M.

7128. ——. William's Sel., Mt. Crosby, 12 miles W. of Brisbane. *Co.* Stanley (*ante*). *Ref.* G.S.M.

7129. ——. *Assoc.with* Ironstone, in quartz. *Loc.* Auckland Point, 1 mile N.W.byN. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 21, p. 1 (1883).

7130. ——. *Assoc.with* Psilomelane. *Loc.* Mt. Millar Mine, 6 miles W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.M.

7131. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Hematite, Magnetite, Limonite, Göthite, and Satin Spar. *Loc.* Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* and *Assays*) G.S.Q. Pubs. 17 (1884), 47 (1888), 83 (1892), and 132 (1898).

7132. ——. *Assoc.with* Psilomelane. *Loc.* Por. (917), Walla, 5 miles S.S.W. of Gin Gin Rail. Stn., 34 miles (by rail and road) W. of Bundaberg. *Co.* Bowen; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 189, pp. 7, 8 (1904).

7133. ——. *Loc.* Dryfesdale, Glastonbury, 17 miles W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 125, p. 36 (1897).

7134. ——. *Assoc.with* Psilomelane, in large lode. Skyring's Mine, Pie Cr., W. of Por. 1335, Par. of Glastonbury, 10½ miles S.S.W. of Gympie. *Co.* March; *Dist.* Wide Bay. *Assay:* Manganese-dioxide by available oxygen = 91·3 per cent. Total Manganese = 58·3 per cent. *Ref.* A.R., p. 148 (1908).

——. *See also* Manganese-dioxide.

Pyromorphite. *Compo.*, Phosphate of lead. *Colour*, greenish, yellowish, brownish. *Streak*, white. *Lustre*, resinous. *H.* = 3·5-4. *Sp.gr.* = 6·5-7·1. *Contents* (*max.*), Lead 76 per cent.

7135. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Billy Brown Reef, Mark Twain Centre, 5 miles E.N.E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 118, p. 46 (1896).

7136. ——. *Assoc.with* Gold, Cerussite, and Ironstone, in quartz. *Loc.* Federation Reef, Tabletop, 9 miles N.N.E. of Croydon Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

7137. ——. *Assoc.with* Gold, Anglesite, and Massicot. *Loc.* Hope Reef, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 36 (1896).

7138. ——. *Assoc.with* Gold and Massicot. *Loc.* Mt. Morgan Reef, Tabletop (*ante*). *Ref.* G.S.Q. Pub. 118, p. 35 (1896).

7139. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Cerussite, and Massicot. *Loc.* Tabletop Reefs, 8 miles N.N.E. of Croydon Rail. Stn. (Normanton-Croydon line). *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 118, p. 34 (1896).

7140. ——. Aurora Reef, 8 miles S.W. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 35, p. 5 (1887).

7141. ——. *Loc.* Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

7142. Pyromorphite. *Loc.* Calcifer, 132 miles (by rail) W.S.W. of Cairns (Cairns-Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

7143. ——. *Loc.* Paisley Silver Mine, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

7143A. Pyromorphite. *Assoc.with* Wulfenite ? (tungsten-bearing) in a matrix of porous ironstone and quartz. *Loc.* Christmas Gift Mine, Chillagoe, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

7144. ——. *Loc.* Gilbert R., about 50 miles S.E. of Charleston, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 4, p. 71 (1887).

7145. ——. Coolgarra Tin Mines, 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

7146. ——. *Loc.* Newellton (Silver Valley), 10 miles S.E.E. of Irvinebank, 10 miles S.W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

7147. ——. *Loc.* Alice Shaft, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M.

7148. ——. *Assoc.with* Galena, Cerussite, Minium, Anglesite, and Linarite, in lode. *Loc.* Alpha Silver-Lead Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) from Ravenswood Junction. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Assay: See* 2981. *Ref.* G.S.Q. Pub. 26, p. 2 (1886).

7149. ——. Ruby Cr., 8 miles N.N.W. of Anakie Rail. Stn. (Central line). *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* P.R.S.Q., vol. 4, p. 71 (1887).

7150. ——. *Assoc.with* Cerussite and Altaite, in quartz. *Loc.* 5 miles from Maxwelton, 40 miles S.W of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* O.R.

7151. ——. St. Aignan (Misima) Is., Louisiade Archipelago, 379 miles E.byS. of Port Moresby, Brit. New Guinea.

Pyrope. *Var. of* Garnet, *which see.*

Pyrrhotite. *Syn.* Pyrrotine. Magnetic Pyrites. *Compo.*, Sulphide of iron. *Colour*, bronze-yellow, copper red. Metallic, magnetic. *H.* = 3·5-4·5. *Sp.gr.* = 4·58-4·64. *See note under* Nickel. *Contents* (*max.*), Iron 61 per cent.

7152. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Copper Pyrites, Cuprite, Malachite, Tenorite, Bismuthinite, Zinc Blende, Hematite, and Calcite, in quartz lode. *Loc.* Commonwealth Mine, Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), 207, pp. 14-19 (1907).

7153. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Queenslander Mine, Charleston, 140 miles (by rail) S.W. of Almaden Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 219, p. 13 (1909), and O.R.

7154. ——. *Assoc.with* Iron Pyrites and Copper Pyrites, in quartz. *Loc.* Havelock Mine, 5 miles S. of Charleston Rail. Stn., Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 219, p. 11 (1909), and O.R.

7154A. ——. *Assoc.with* Copper Pyrites, Garnet, Hornblende, and Calcite, in quartz. *Loc.* Einasleigh Copper Mine, 102 miles (by rail) S.S.W. of Almaden Rail. Stn. (Etheridge line). *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pub. 219, pp. 21-26 (1911).

7155. ——. Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 56 (1900).

7156. ——. Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn., 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 56 (1900).

7157. ——. Penzance Mine, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), 152 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook.

7158. ——. Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 56 (1900).

7159. ——. *Assoc.with* Ironstone, in the "Brownstone" of the Charters Towers Goldfield. *Ref.* P.R.S.Q., vol. 4, p. 50 (1887).

7160. ——. *Assoc.with* with Gold, Iron Pyrites, and Hematite, in quartz. *Loc.* Greasy Bill's Reef, Pyramids or Seventy-mile, 3½ miles N.N.E. of Mt. Leyshon. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 1, p. 19 (1879).

7161. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Zinc Blende. *Loc.* Mines on the Ravenswood Goldfield, 78 miles (by rail) S. of Townsville (Gt. Northern line). *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

7161A.——. *Assoc.with* Iron Pyrites, Hematite, Limonite, Magnetite, Copper Pyrites, Malachite, Azurite, in granite and slate. *Loc.* Rodger's Back Sel. (1430), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 228, pp. 41, 42 (1910).

7161B.——. *Assoc.with* Iron Pyrites, in graphitic schist and quartz. *Loc.* Tambourine Mt., 10 miles S.S.E. of Logan Village Rail. Stn. (Beaudesert Br. line). *Co.* Ward; *Dist.* **Moreton.** *Ref.* O.R. (1910).

7161C.——. *Assoc.with* Copper Pyrites. *Loc.* Many Peaks Copper Mine, Deception Cr., 58 miles (by rail) S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* B.D.

7161D.——. Crow's Creek, Barmundoo Run, 35 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* B.D.

7162. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and traces of Nickel, in quartz reef. *Loc.* Hector Mine, on Crocodile Cr. Rd., 6 miles S. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 125, p. 27 (1897), and G.S.M.

7163. ——. Containing small quantities of Cobalt. Hunter's Gully, Morinish Goldfield, 29 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* B.D.

7164. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Redruthite, Mispickel, Galena, and Stibnite. *Loc.* Mariner's Reef, Black Snake Goldfield, 10 miles S. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Assays:* *See* No. 2318. *Ref.* G.S.Q. Pub. 28, p. 6 (1886).

7165. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* Motha Mt., nr. Gympie, 106 miles (by rail) N.byW. of Brisbane. *Co.* March; *Dist.* Wide Bay. *Ref.* A.R., p. 152 (1908).

Quambeytook Bore. *See under* Artesian Bores. No. 375.

Quambone East Sub-atresian Bore. *See under* Artesian Bores. No. 441.

Quarrell's Bore. *See under* Artesian Bores. No. 325.

Quarry, below Spring Bluff Rail. Stn. *Min.Ref.* Olivine, *see* 6929B.

—— Cr., nr. Stanwell. *Min.Ref.* Coal, *see* 1797. *See* Quarry Cr., and Petersen's Bores *under* Coal Bores.

—— Hill, nr. Clermont. *Min.Ref.* Coal Bands, *see* 1674.

—— Reserve, Toowoomba. *Min.Ref.* Sphærosiderite, *see* 7421.

Quart Pot Cr., Stanthorpe. *See* Pl. 30. *See maps,* Pls. 12, 13, 30. Heads at the Dividing Range, near Mt. Hume; flows N. for about 12 miles, where it is joined by Sugarloaf Cr., then south through Stanthorpe to form the Severn River. Length about 18 miles. Tribs., McLaughlin Cr., Paddock Swamp Cr., Mountain Stn. Cr., Sugarloaf Cr., Kettle Swamp Cr., Dolcoath or Ten Mile Cr.

Mineral References: Amethyst, *see* 7168; Beryl, 293; Cairngorm, 7176; Cassiterite, 985, 1000-1006; Diamond, 2575; Garnet, 3117; Hyacinth, 8233; Ilmenite, 4898; Rock Crystal, 7189; Sapphire, 2348; Spinel, 7578; Topaz, 7793; Tourmaline, 7858; Wolfram, 7991-7993; Zircon, 8233. Barklyite, 2365A.

—— —— —— and Severn R. (junction of), ½-mile N.W. of Stanthorpe. *Min.Ref.* Cassiterite, *see* 1013; Diamond, 2577; Sapphire, 2349.

—— —— —— and Kettle Swamp Cr. (junction of), Stanthorpe Township. *Min.Ref.* Chromite, *see* 1473.

Quart Pot Cr. Opal Field, Yerounghoola Run, Kyabra Opal Field. Centre—about *Lat.* 27° 25′ S., *Long.* 144° 29′ E. *Min.Ref.* Opal (precious), *see* 6944.

Geological Note: The rocks in which the opal occurs are of "Desert Sandstone" Formation (Upper Cretaceous). The opal is found in sandstone boulders, and in small irregular veins and pipes of silica (chalcedony) and oxide of iron (limonite). *See* G.S.Q. Pub. No. 177 for details.

Quartz. *Compo.*, Silica (silicon dioxide). *Colour*, white, yellowish, etc., sometimes colourless. *H.* = 7. *Sp.gr.* = 2·653-2·654. *Varieties*, Amethyst (purple), Cairngorm (yellowish and smoky), Rock Crystal (clear and colourless), Rose Quartz (pinkish white), Sinter.

Mineral Note: Large crystals of quartz occur at Croydon, some of the specimens being eight inches in diameter. They are, however, too discoloured for optical purposes. Amethyst is comparatively rare, but small crystals, one inch in diameter, are found near Bowen. Cairngorm is common at Stanthorpe, and is occasionally used for jewellery. Rock crystal is common, but stones sufficiently large for optical purposes are rare. Sagemite (Rutile needles in quartz) is not uncommon at Stanthorpe, and good specimens are much in demand for pendants and as curiosities.

7165a.——. **Amethyst** (*Var.*). *Assoc.with* Cassiterite, Ilmenite, Rutile, Topaz, and Zircon, in alluvial deposit. *Loc.* P.C. Workings, Rocky Cr., 5 miles above Brovinia Cr., br. of Cardarga Cr., 35½ miles S.S.W. of Gayndah, 60 miles (by road) *viâ* Cooranga Head Stn. *Co.* Newcastle; *Dist.* **Burnett.** *Ref.* Q.G.M.J., vol. 5, p. 62 (1904).

7166. —— ——. In granite. *Loc.* Mt. Barunda, Tate R., 1 mile E.N.E. of Fisherton, 24 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 60 (1900).

7167. —— ——. *Assoc.with* Cassiterite, Stannite, Topaz, Zircon, Sapphire, Gold, and Diamond, in alluvial deposits. *Loc.* Broadwater and its tributaries, Stanthorpe Mineral Field. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 31 (1898).

7168. —— ——. *Assoc.with* Diamond, Sapphire (yellow, green, blue, and pink), Beryl, Spinel, Zircon (*var.* Hyacinth), Garnet (red), Tourmaline, Topaz, Cairngorm, Rock Crystal, Cassiterite, and traces of Gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot, Sugarloaf, Lode, Arbouin's, Cannon, Kettle Swamp Crs., and Severn R., Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck (*ante*). *Ref.* B.D., and G.S.Q. Pub. 120 (1898).

7169. —— ——. Coolgarra Tin Mines, 12 miles (by coach) N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 15, p. 60 (1900).

7169a. —— —— (Crystals). Donford, Don R., 10 miles S. of Bowen. *Co.* Herbert. *Dist.* Kennedy North. *Ref.* B.D.

7169b. —— ——. *Assoc.with* Limestone, Epidote, Magnetite, and Garnet. *Loc.* Don R., near Bowen Road. *Co.* Herbert (*ante*). *Ref.* B.D.

7170. —— ——. *Assoc.with* Gold, Sapphire, Spinel, Garnet, Zircon, Cairngorm, Chalcedony, Jasper, Topaz, Diamond, Magnesite, Tourmaline, Hornblende, Magnetite, Ilmenite, and Rutile, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Crs., Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton (Central line). *Cos.* Clermont and Plantagenet; *Dist.* Leichhardt. *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), 172 (1902).

7171. —— ——. Upper Brisbane R., nr. Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* G.S.M.

7172. —— ——. *Loc.* Darlington Reserve, nr. Beaudesert, 47 miles (by rail) S.byE. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.M.

7173. —— ——. Logan R., 27 miles S. of Brisbane. *Co.* Ward (*ante*). *Ref.* Q.M.

7174. ——. **Cairngorm** (*Var.*). Rocky Cr., nr. Hawkwood, Brovinia Goldfield, 50 miles S.W. of Gayndah Rail. Stn. *Co.* Newcastle; *Dist.* **Burnett.** *Ref.* L.C.B

7175. —— ——. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbullah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15 (1900).

7176. —— ——. As pebbles. *Assoc.with* Sapphire (yellow, green, blue, and pink), Zircon, Beryl, Garnet, Spinel, Cassiterite, Diamond, Tourmaline, Topaz, Rock Crystal, Amethyst, and traces of Gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot, Sugarloaf, Lode, Arbouin's, Cannon, Kettle Swamp Crs., and Severn R., Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120 (1898), and B.D.

7177. —— ——. *Assoc.with* Rock Crystal, Tourmaline, Zircon, Sapphire, and Cassiterite, in alluvial deposits. *Loc.* Camp Reserve, 6 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

7178. —— ——. *Assoc.with* Gold, Cassiterite, Diamond, Sapphire, Zircon, Spinel, Garnet, and Topaz, in alluvial deposits. *Loc.* Spring Cr. and its tributaries, 2¾ miles W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 32 (1898).

7179. —— ——. Herbert R., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North.

7180. —— ——. *Assoc.with* Common Opal, Opalised Wood, and Cassiterite, in alluvial deposits under basalt. *Loc.* Brewery Hill, Nigger Cr., br. of Wild R., 3 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7181. —— ——. *Assoc.with* Gold, Sapphire, Spinel, Garnet, Zircon, Amethyst, Chalcedony, Jasper, Topaz, Diamond, Magnesite, Tourmaline, Hornblende, Magnetite, Rutile, and Ilmenite, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Crs., Anakie Sapphire Field, 193 miles W. of Rockhampton (Central Rail. line). *Cos.* Clermont and Plantagenet; *Dist.* Leichhardt. *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), 172 (1902).

7182. —— —— (crystals). Por. 46v, Crow's Nest, 34 miles (by rail) N.N.E. of Toowoomba, 135 miles (by rail) W.N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* L.C.B.

7183. ——. **Rock Crystal** (*Var.*). In crystals 5 inches in diameter. *Loc.* Content Mine, 3 miles N.W. of Croydon Rail. Stn. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

7184. —— ——. *Assoc.with* Sapphire and Chalcedony, in alluvial deposits. *Loc.* Rossville Tin Mines, Wallaby Cr., trib. of Annan R., 25 miles S. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* O.R.

7185. —— ——. *Assoc.with* Cassiterite, Chlorite, and Mica, in quartzite lode. *Loc.* Just-in-Time Mine, nr. Ragged Cr., 7 miles S. of Montalbion, 14 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 33 (1897).

7186. —— ——. *Assoc.with* Cassiterite, in soft ferruginous rock. *Loc.* Grand Secret Tin Mine, Watsonville, 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q., Pub. 13, p. 21 (1883).

7187. —— ——. *Assoc.with* Orthoclase and Cassiterite. *Loc.* Gt. Western Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 27 (1883).

7188. —— ——. Agate Cr., br. of Robertson R., 21 miles S.W. of Charleston Rail. Stn., Etheridge line, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* Q.M.

7189. —— —— (pebbles). *Assoc.with* Yellow, Green, Blue, and Pink Sapphire, Red Zircon, Beryl, Spinel, Cassiterite, Diamond, Tourmaline, Topaz, Cairngorm, and Amethyst, with traces of gold, in alluvial deposits. *Loc.* Hunt's Quart Pot, Sugarloaf, Lode, Arbouin's, Cannon, and Kettle Swamp Creeks, and Severn R., Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120 (1898), and B.D.

7190. —— ——. *Assoc.with* Cairngorm, Tourmaline, Zircon, Sapphire, and Cassiterite, in alluvial deposits. *Loc.* Camp Reserve, Spring Cr., 6 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

7191. —— ——. In porphyritic rock. *Loc.* Mt. Leyshon, 16 miles S. of Charters Towers. *Co.* Davenport; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 18, p. 1 (1885).

7192. —— ——. *Loc.* Magnetic Is., Cleveland Bay, 5½ miles N. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 75, p. 3 (1892).

7193. —— ——. *Assoc.with* Copper Pyrites. *Loc.* Marengo Goldfield, 30 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 63 (1887).

7194. —— —— (rhombohedron). *Loc.* Malvern Peaks, Peak Range, 38 miles E.byS. of Clermont. *Co.* Cairns; *Dist.* **Leichhardt.** *Ref.* B.D.

7195. —— ——. *Loc.* Por. 2685, Crow's Nest, 34 miles (by rail) N.N.E. of Toowoomba, 135 miles (by rail) W.N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* L.C.B.

7196. —— ——. In vugh of quartz in volcanic tuff. *Loc.* Kangaroo Point Quarries, Brisbane R. *Co.* Stanley; *Dist.* Moreton. *Ref.* B.D.

7197. —— ——. *Assoc.with* Gold, Garnet, Calcite, and Copper carbonate. *Loc.* Mt. Grim, 3½ miles W.S.W. of Mt. Alma Rail. Stn., 31 miles S.W.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 194, p. 24 (1904).

7198. —— ——. Mt. Hay, 1½ mile S. of Wycarbah Rail. Stn., Central line, 25½ miles (by rail and road) S.W.byS. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 131, p. 21 (1898)

7198A. —— ——. *Assoc.with* Chalcedony, Carnelian, and Agate, in quartz. *Loc.* Gilmore Stn., head of Bulloo R., about 38 miles N. of Adavale. *Co.* Gowan; *Dist.* Warrego. *Ref.* O.R. (1910).

7199. ——. **Rose Quartz** (*var.*). *Loc.* Mt. Barunda. Tate R., 1 mile E.N.E. of Fisherton, 24 miles W.S.W. of Almadn Rail. Stn. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 60 (1900).

7200. ——. **Siliceous Sinter** (*Var.*). *Assoc.with* Gold, in quartz. *Loc.* Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 41 (1887).

Quartz Hill, on Elizabeth Cr. (br. of Einasleigh R.). *Min.Ref.* Beryl (aquamarine), *see* 300; Garnet (almandine), 3154.

—— Is., Duke Group. *Min.Ref.* Chlorite, *see* 1468.

—— Reef, Cone Cr., Cloncurry. *Min.Ref.* Copper carbonate, *see* 1875; Cuprite, 2396.

—— ——, nr. Mt. Luxton. *Min.Ref.* Anglesite, *see* 36; Galena, 2789; Iron Pyrites, 5073; Limonite, 5842.

Quartzite Gully, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

Queen Copper Lode, Mt. Moss Extd. Lease (169), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1253; Minium, 6600.

—— Mine, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3678.

—— ——, Thane's Cr. Goldfield. Discovered on 24th May, 1881, by Mr. Clarkson. *Min.Ref.* Gold, *see* 3871.

—— Reef, Bee Cr. Diggings. *Min.Ref.* Gold, *see* 4102; Iron Pyrites, 5294.

—— ——, Charters Towers Goldfield. *Min.Ref.* Calcite, *see* 500; Chlorite, 1459; Galena, 2907; Gold, 3966; Gypsum, 4621; Iron Pyrites, 5200; Steatite, 7690; Zinc Blende, 8131.

—— ——, Mt. Clifford Mine, N.W. of Anakie. *Min.Ref.* Gold, *see* 4167.

—— Group of Reefs, Maytown, Palmer Goldfield. *Includes* Captain Cook, Mountain Maid, Smithfield, Queen of the North, and Viking Reefs. *Min.Ref.* Gold, *see* 3681.

—— Silver-Lead Mine, Stanthorpe. *See* Silver Queen Silver Mine.

—— Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1113; Chlorite, 1453.

—— Alexandra Reef, Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3667B.

—— Bee M.C. (278), St. Paul's Group, Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2118; Limonite, 5824; Redruthite, 7270.

—— Block Extd. Mine, Charters Towers Goldfield. *Min.Ref.* Calcite, *see* 499; Scolecite, 7361.

—— Central G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2903; Gold, 3928; Iron Pyrites, 5196.

—— —— Block G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2904; Gold, 3929; Iron Pyrites, 5197.

—— Constance P.C., 4 and 5 N. Mines, Mareeba Goldfield. *Min.Ref.* Gold, *see* 3774-3776; Iron Pyrites, 5079-5080; Stibnite, 7632; Zinc Blende, 8089.

—— Cross G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2906; Gold, 3931; Iron Pyrites, 5199.

—— Deep Mines Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2905; Gold, 3930; Iron Pyrites, 5198; Zinc Blende, 8130.

—— of Beauty Reef, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3679.

—— of Croydon 2 S. Mine, Croydon Goldfield. *Min.Ref.* Cerargyrite, *see* 1177; Silver (native), 7545.

—— —— Reef, Croydon Goldfield. *Min.Ref.* Galena, *see* 2704, 2709; Gold, 3493; Iron Pyrites, 4938, 4944; Limonite, 5800; Zinc Blende, 8056.

—— of the North Reef, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3681.

—— of the Valley Mine, 4 miles N.E. of Mt. Morgan Rail. Stn. *Min.Ref.* Copper Pyrites, *see* 2315; Gold, 4376; Iron Pyrites, 5431; Mispickel, 6805; Zinc Blende, 8206.

—— —— Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

—— of the West Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 913; Felspar, 2637.

Queen's Birthday Bore. *See under* Artesian Bores. No. 268.

Queensland (State of). (*See under* Districts of Queensland for subdivisions.)

Boundaries: Commencing at Point Danger (28·8° S. Lat.), thence by Macpherson Range to the Dumaresq and Macintyre Rivers; thence by the 29th parallel to 141° E. Long.; thence northerly to the 26th parallel; thence westerly to the 138° E. Long.; and thence northerly to the Gulf of Carpentaria and Torres Strait (including all islands between Papua and Cape York Peninsula) to the Pacific Ocean; and thence southerly by the Great Barrier Reef to the point of commencement.

Population (1912): 636,425.

Area: The total area of the State, exclusive of islands, is 670,500 sq. miles (429,120,000 acres). With the islands included, the area is 673,040 sq. miles (430,745,600 acres). *See under* Districts of the State for details.

—— (South Coast of). *Min.Ref.* Cassiterite, *see* 1174; Gold, 3370-3372; Monazite, 6881, 6882; Platinum, 7073; Silver, 7511.

—— Anthracite Co.'s Bore, Central Rail. line. *See under* Coal Bores.

—— Border, nr. Hungerford. *Min.Ref.* Opal (black—precious), *see* 6936B.

—— Cinnabar Lode, 6½ miles W.byS. of Kilkivan. *Min.Ref.* Cinnabar, *see* 1559.

—— Coal Trade. Some notes on its present condition. *See under* Govt. Ming. Jour., Report No. 79.

—— Collieries Co.'s Bore and Colliery, Burrum Goldfield. *See under* Coal Bores. *Min.Ref.* Coal, *see* 1805.

—— Copper Mine, 6 miles N. of Mt. Perry. *Min.Ref.* Azurite, *see* 175; Malachite, 6196.

—— Gems. Paper on—. *See under* Govt. Ming. Jour., Report No. 73.

—— Gem Industry. *See under* Govt. Ming. Jour., Report No. 16.

—— Geological Survey Publications. *See* Geological Survey Publications.

—— Goldfields. (On the conditions and modes of working on the.) *See under* Gov. Ming. Jour., Report No. 5.

—— Government Geologists. *See* Government Geologists.

—— —— Mining Journal. *See* Government Mining Journal.

—— Iron Ores. *See under* Govt. Ming. Jour., Report No. 18.

—— Mines Regulation Bill. *See under* Govt. Ming. Jour., Report. No. 110.

—— Scheelite Co.'s Mine, Toweran Run, Burnett R. *Min.Ref.* Scheelite, *see* 7356.

—— Seaports. *See under* Ports.

—— Silver-Lead Mines, Ltd., Lawn Hills. *See under* Govt. Ming. Jour., Report No. 6.

—— Smelting Works. *See* Smelting Works.

Queenslander Copper Mine, Mt. Redcap, 3 miles N.E. of Mungana (Chillagoe line). *Min.Ref.* Azurite, *see* 201; Cerussite, 1210, 1211; Copper Phosphate, 2059; Copper Pyrites, 2175; Galena, 2809; Ironstone, 5531; Limonite, 5845; Malachite, 6242, 6243; Manganese-dioxide, 6411; Minium, 6591; Pyrolusite, 7119; Siderite, 7407; Tetrahedrite, 7767.

—— —— M.L. (436), Mt. Metallic Group, Cloncurry. *Min.Ref.* Calcite, *see* 469; Copper Pyrites, 2116; Jasper, 5636; Malachite, 6184; Redruthite, 7268.

—— Creek, Top Camp, Ulam Goldfield. *Min.Ref.* Galena, *see* 3056; Gold, 4305.

—— Gold Mine, Charleston, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2750; Gold, 3722; Iron Pyrites, 5043; Pyrrhotite, 7153; Zinc Blende, 8076.

—— —— ——, Big Hill, Talgai Goldfield. Discovered in 1863. The first gold mine opened in Queensland after Separation. *Min.Ref.* Gold, *see* 3859; Iron Pyrites, 5123.

—— —— ——, Ulam Goldfield. *Min.Ref.* Galena, *see* 3056; Gold, 4305; Iron Pyrites, 5397.

—— —— Reef, Charters Towers Goldfield. *Min.Ref.* Gold, *see* 3967; Iron Pyrites, 5201.

—— —— ——, Dreghorn Diggings, S. of Ravenswood. *Min.Ref.* Gold, *see* 4081.

—— Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

—— Freehold Co.'s Mine, Black Snake Goldfield. *Min.Ref.* Gold, *see* 4390; Iron Pyrites, 5441.

Queensport (Baynes' Bros.' Meat Works). *Min.Ref.* Coal, *see* 1771A. *See also under* Coal Bores.

Quetta or Skardon's Silver Mine, Dargalong. *Min.Ref.* Anglesite, *see* 35; Cerussite, 1200; Ironstone, 5528.

Quicksilver. *Syn.* Mercury, *which see.* *See also* Cinnabar.

Quilberry Bore. *See under* Artesian Bores. No. 357.

Quilbone Cr. Bore. *See under* Artesian Bores. No. 162.

Quinn's Block G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2908; Gold, 3932; Iron Pyrites, 5202.

Quoin Island, 3 miles N. of Gladstone. *Lat.*, 23° 49′ S.; *Long.*, 151° 20′ E. *Min.Ref.* Turquoise, *see* 7904.

GEOLOGICAL NOTE: *See under* Curtis Island.

Racecourse, Eagle Farm. *Min.Ref.* Coal, *see* 1762; Sub-artesian Water, 7667.

—— Bore. *See under* Artesian Bores. No. 9. *See also* Eagle Farm, *under* Coal Bores.

—— (Mt. Enniskillen) Bore. *See under* Artesian Bores. No. 348.

Radiated Pyrites. *Syn.* Marcasite, *which see.*

Radio-active Minerals. *See* Chalcolite, Monazite, Pitchblende.

Radium (R.). *Atom.wt.* = 226·5.

MINERALS: *See* Chalcolite, Pitchblende, and Monazite. The two former minerals have been found only in traces, but Monazite occurs in several mines on the tin and wolfram fields of Chillagoe and Herberton, in Northern Queensland.

GEOLOGICAL NOTE: Pitchblende, the main source of radium, has been found in small quantities in the State, and the conditions under which the mineral usually occurs are so pronounced that every encouragement can be given to prospect for it. About the Chillagoe, Herberton, and Fossilbrook Fields, and many other places in Northern Queensland, and also in the Burnett district and on the Southern border of the State, the country seems favourable for its occurrence. Other minerals slightly radio-active, more particularly Monazite, are found in numerous localities, and Chalcolite, the uran-mica, has also been recorded.

Rafter's Sel., 63 (Bromelton), 5 miles W. of Beaudesert. *Min.Ref.* Coal, *see* 1780.

Ragged Creek, 7 miles S. of Montalbion. *Min.Ref.* Cassiterite, *see* 877; Chlorite, 1434; Mica, 6556; Rock Crystal, 7185.

—— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 914.

Raggote Cr., trib. of Futter's Cr., Boyne R., S. of Gladstone. *Min.Ref.* Marble, *see* 593.

Raglan Co. Port Curtis Dist. *See map,* Pl. 2.

—— Creek, 22 miles S.E. of Rockhampton. *Min.Ref.* Limestone, *see* 679.

Raglan Goldfield, 34 miles (by rail) W.N.W. of Gladstone. Centre—about *Lat.* 23° 46′ S.; *Long.* 150° 55′ E. Discovered in 1867. *Statistics: Included in* "Other Goldfields." *Min.Ref.* Cuprite, *see* 2474; Gold (alluvial) 3386-3389, (reef) 4296, 4297; Kaolin, 5699; Limestone (coralline), 679, 679B, 724; Malachite, 6359.

MINERAL STATISTICS. Included in other Goldfields. No separate records.

GEOLOGICAL NOTE: *See under* Langmorn Goldfield.

Railway Bridge (rocks at), Fitzroy R., Rockhampton. *Min.Ref.* Stilbite, *see* 7664.

—— Cutting, 8 miles W. of Bowen. *Min.Ref.* Molybdenite, *see* 6858A.

—— Cutting, Glen Road Crossing, Goondiwindi Railway. *Min.Ref.* Opal (common), *see* 6974.

—— ——, nr. Moonmera Rail. Stn. (Mt. Morgan line). *Min.Ref.* Limonite, *see* 5919; Magnesite, 5963; Vermiculite, 7917.

—— ——, nr. Kilkivan Rail. Stn. *Min.Ref.* Magnesite, *see* 5963A.

—— ——, Mt. Perry Rail Stn. *Min.Ref.* Clay, *see* 1568.

—— ——, S. of Stanthorpe Rail. Stn. *Min.Ref.* Orthoclase, *see* 7043.

—— ——, Stewart's Cr., nr. Townsville. *Min.Ref.* Coal, *see* 1642A.

—— ——, between Spring Bluff and Harlaxton Rail. Stns. *Min.Ref.* Calcite, *see* 569; Ferro-Calcite, 576; Natrolite, 6897; Phacolite, 1315.

—— ——, N. of Tingalpa Cr., nr. Hemmant Rail. Stn. *Min.Ref.* Chalcedony, *see* 1359A; Opal (common), 6992.

Railways of the State. Four main trunk lines extend from the eastern coast to inland districts, the longest being from Brisbane to Cunnamulla, 604 miles, the three others being Townsville to Cloncurry, 480 miles, Rockhampton to Longreach, 428 miles, and Cairns to Charleston, 258 miles. Brisbane is connected with Gympie, Maryborough, Gladstone, and Rockhampton by a line 397 miles long, and extensions are contemplated to connect Mackay, Bowen, and Townsville with this coastal system. Altogether, there are 3,532 miles of line open for traffic, and 285 miles under construction. Most of the railways are owned by the State, but some are owned by private companies. Railway connections with mining centres are mentioned under name of locality or field, and details concerning fares, distances, etc., are given in the "Queensland Railway Guide," obtainable at all railway stations, or from the Booking Office, The City Block, Edward street, Brisbane.

Railway Freights. For coal, ore, explosives, and machinery freights, *write to* Traffic Manager, Railway Department, Brisbane. *Note.*—A specialist is employed to determine classification of goods, and to fix freight charges.

Rainbow Creek. Flows into Callide Cr., 50 miles S.W. of Gladstone. *Min.Ref.* Copper carbonate, *see* 1963; Magnetite, 6053.

—— M.L. (2454), Boomerang Group, Cloncurry. *Min.Ref.* Antimony, *see* 69; Copper Pyrites, 2074; Cuprite, 2394, 2395; Malachite, 6098, 6099; Stibnite, 7604; Tetrahedrite, 7754, 7755.

—— Reef, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2909; Gold, 3968; Iron Pyrites, 5203.

—— ——, Mt. Clifford Mine. *Min.Ref.* Gold, *see* 4167.

—— Silver Lease, Dry R., 12 miles S.S.W. of Herberton. *Min.Ref.* Calamine, *see* 442; Galena, 2854.

—— —— Mine, Ravenswood. *Min.Ref.* Galena, *see* 2936.

Rainsby Bore. *See under* Artesian Bores. No. 229.

Rainworth Run, ¾-mile S.W. of Springsure. *Min.Ref.* Opal (precious and common), *see* 6949.

Raincourt Bore. *See under* Artesian Bores. No. 221.

Rainfall. Annual and Monthly Averages (in inches) up to 1912:—

Station.	No. of Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Inches.
Bowen ...	25	11·5	9·3	6·5	2·7	1·4	1·5	0·7	0·7	1·2	0·8	1·3	3·7	41·3
Brisbane ...	60	6·7	6·7	6·1	3·6	2·9	2·5	2·3	2·3	2·9	2·7	3·6	5·1	46·5
Bundaberg ...	25	9·5	6·8	6·4	3·1	2·9	2·5	2·2	1·6	1·9	1·9	2·4	4·5	45·9
Bustard Head	25	8·8	7·4	6·0	3·8	3·7	2·6	2·2	1·5	1·5	1·6	2·7	4·5	46·3
Cairns	25	18·9	14·7	20·0	13·9	4·4	2·2	1·1	1·4	1·2	1·5	4·3	7·7	91·3
Caloundra ...	15	6·1	8·2	10·3	6·0	6·3	2·7	2·6	3·3	2·0	2·9	3·3	5·7	59·4
Cooktown ...	25	15·1	11·8	14·2	9·4	2·8	1·9	0·8	1·3	0·6	0·8	3·3	5·8	67·8
Double Is. Pt.	20	6·3	7·0	7·6	4·0	5·3	3·8	3·0	2·3	2·2	2·3	3·2	4·7	51·7
Innisfail ...	25	25·3	21·5	26·3	22·0	12·1	6·4	4·3	5·5	3·1	2·4	7·4	13·0	149·9
Mackay ...	25	15·8	12·1	11·7	6·5	4·2	2·4	1·4	1·3	1·9	1·5	2·5	6·5	67·8
Rockhampton	25	9·5	8·6	5·5	2·5	1·6	1·8	1·6	1·0	1·4	1·5	2·2	4·0	41·2
Southport ...	25	7·9	7·8	8·7	5·3	4·7	2·9	3·1	2·6	2·7	2·9	3·3	5·3	57·2
Tewantin ...	16	8·8	9·3	11·5	6·8	6·4	4·6	3·1	2·3	3·1	3·1	3·9	5·4	68·3
Townsville ...	23	15·0	11·8	7·8	3·2	1·5	1·2	0·4	0·5	1·2	1·3	1·9	5·7	51·5

Ram Cr. Bore. *See under* Artesian Bores. No. 195.

Ramsay's (A.) Sub-artesian Bore. *See under* Artesian Bores. No. 370.

Ramsey Downs Bore. *See under* Artesian Bores. No. 331.

Rand (W. Rhodes) Artesian Bore. *See under* Artesian Bores. No. 199.

Rands (William H.), A.R.S.M.

Geological Survey Publications :—

20. Progress Report of the Assistant Government Geologist for the year 1884, in Annual Report of the Department of Mines for 1884. (1885).
21. On the Goldfields of Raglan, Calliope, Milton (Norton), and Cania, in the Port Curtis District; and on the Mineral Deposits in the Burnett District. 1885.
23. Progress Report of the Assistant Government Geologist for the year 1885, in Annual Report of the Department of Mines for 1885. (1886).
24. On the Burrum Coalfield, 1886.
25. On the Gold and Silver Deposits in the neighbourhood of Mount Shamrock, 1886.
27. On the Geology and Mineral Deposits of the country in the vicinity of Clermont, 1886.
28. On the Geology and Mineral Resources of the Districts of Kilkivan and Black Snake. 1886.
29. On the Gold Deposits in the neighbourhood of Nanango. 1886.
33. Annual Report of the Assistant Government Geologist for the year 1886, in Annual Report of the Department of Mines for 1886. (1887).
34. Geological Map of the City of Brisbane and its Environs, accompanied by a Report. 1887.
36. On the Geology of, and Mineral Deposits occurring in the country in the neighbourhood of Beenleigh and of the Logan and Albert Rivers. 1887.
38. On a Cobalt Lode at Black Snake, Kilkivan. 1887.
40. On the Glenelg and other Reefs in the neighbourhood of Thane's Creek and Talgai, and certain Mineral Deposits near Stanthorpe. 1887.
42. Annual Progress Report of the Assistant Government Geologist for the year 1887, in Annual Report of the Department of Mines for 1887. (1888).
43. On the Eidsvold Goldfield, 1887.
49. Annual Progress Report of the Geological Survey for the year 1888. (1889).
51. On the Albert and Logan District, 1889.
52. On the Gympie Goldfield. 1889.
56. On Geological Specimens from New Guinea. 1889.
58. Annual Progress Report of the Geological Survey for the year 1889. (1890).
59. On the Tiaro District Coal Measures, Neardie Antimony Mine, and Teebar and Culgoa Copper Lodes. 1890.
60. On Mount Biggenden Bismuth Mine, Gebangle, and the Mount Shamrock Mine. 1890.
63. On the Brookfield, Pullen Vale, and Moggill Districts. 1890.
64. On the Coal in the Parish of Noosa. 1890.
67. On the Mineral Selections on the Ballendean and Jibbinbar Runs. 1890.
68. On the Paradise Goldfield. 1891.
73. On the Cape River Goldfield. 1891.
76. Second Report on the Gympie Goldfield. 1891.
77. Annual Progress Report of the Geological Survey for the year 1890. (1891).
79. On an Alluvial Cinnabar Deposit near Kilkivan. 1892.
80. On the Discovery of Coal near the Callide Creek, Port Curtis District, 1891.
84. On the Styx River Coalfield. 1892.
86. On Olsen's and Johannsen's Caves, near Rockhampton. 1892.
87. Annual Progress Report of the Geological Survey for the year 1891. (1892).
91. Geological Observations in the Cooktown District. 1893.
94. Annual Progress Report of the Geological Survey for the Year 1892. (1893).

Rands (William H.), A.R.S.M.—*continued:*

Geological Survey Publications—*continued:*

95. Geological Map of Charters Towers Goldfield on the scale of four chains to an inch. 1892.
96. On the Deep Lead, Pentland, Cape River Goldfield. 1894.
97. On the Towalla and Mareeba Goldfields. 1894.
98. Annual Progress Report of the Geological Survey for the year 1893. (1894).
100. Third Report on the Gympie Goldfield. 1894.
102. Second Report on Eidsvold Goldfield. 1895.
103. Annual Progress Report of the Geological Survey for the year 1894. (1895).
104. On the Leichhardt Goldfield and other Mining Centres in the Cloncurry District. 1895.
108. Annual Progress Report of the Geological Survey for the year 1895. (1896).
112. On the Horn Island Goldfield. 1896.
113. Bulletin No. 3, Mount Cannindah Copper and Gold Deposits. 1896.
118. On the Croydon Goldfield. 1896.
124. On the Eidsvold Goldfield.
129. On the Big Hill Gold Mining Company's Lease, Talgai. 1898.
133. Bulletin No. 8. On the Gold Mines at the Fanning and Mount Success, 1898.
139. Geological Map of Gympie Goldfield, showing underground workings. On a scale of four chains to an inch. 1899.
142. Geological Map of Charters Towers Goldfield, showing underground workings. On a scale of four chains to an inch. 1898.
143. Annual Progress Report of the Geological Survey for the years 1896-8. (1899).
150. Annual Progress Report of the Geological Survey for the year 1899. (1900).
159. Annual Progress Report of the Geological Survey for the year 1900. (1901).
160. Bulletin No. 14. Third Report on the Eidsvold Goldfield, with notes on McKonkey Creek Diggings, and Antimony Lode. 1901.
166. Fourth Report on the Gympie Goldfield, having Special Reference to the Inglewood Dyke and the Eastern Leases. 1901.
170. On the Burrum Coalfield, 1901. (Reprint of No. 24.)

QUEENSLAND GOVERNMENT MINING JOURNAL—

Murphy's Cr. Coal Measures. In vol. 1, p. 212 (1900).

Oaks Rush Goldfield. Vol. 13, p. 544 (1912).

SUPPLEMENTARY REPORTS: *See* List under separate heading. Nos. 1, 16, 17, 18, 19, 20, 21, 22, 25, 33, 37, 38, 39, 40, 41, 42, 49, 50, 51, 52, 53, 54, 58, 70, 71, 74, 75, 76, 77, 78, 79, 80, 85, 86, 87, 88, 89, 90, 98, 99.

Randwick Bores. *See under* Artesian Bores. Nos. 341, 413.

Range, between Charters Towers and Ravenswood Roads. *Min.Ref.* Gold, *see* 3987; Iron Pyrites, 5224A.

——, nr. Mt. Morgan. *Min.Ref.* Fireclay, *see* 2651.

Ranges, W. of Dolcoath Cr., Stanthorpe. *Min.Ref.* Molybdenite, *see* 6848; Wolfram, 7985.

Rangeview Cr. Bore. *See under* Artesian Bores. No. 161.

Ranken's Bore. *See under* Artesian Bores. No. 188.

Rankin's Bore. *See under* Artesian Bores. No. 261.

Rannes Goldfield (Kauffman Diggings), 32 miles S. of Westwood Rail Stn. *Lat.*, 24° 4′ S.; *Long.*, 150° 5′ E. Discovered end of 1886. *Statistics included in* "Other Goldfields." *Min.Ref.* Gold, *see* 4184. *Geol. Note:* Rocks include slates, etc., belonging to the Gympie Formation (Permo-Carboniferous).

—— Head Stn., 34 miles S. of Westwood Rail. Stn. (Central line). *Min.Ref.* Malachite, *see* 6336.

—— Hill, Gogango Ranges. *Min.Ref.* Azurite, *see* 237; Copper Ores, 2041.

Raspberry Creek, Mt. Morgan. *Min.Ref.* Manganese-dioxide, *see* 6481.

Rathdowney, S.W. of Beaudesert. *See* Coal, 1790A. *Also* Coal Analyses in Table, p. 262.

Rattle Snake Reef, Sudest Is., Brit. New Guinea. *Min.Ref.* Gold, *see* 4558.

Rattler Lease (233), Kangaroo Hills Mineral Field. *Min.Ref.* Atacamite, *see* 135; Azurite, 222; Galena, 2973.

Ravensbath Bore. *See under* Artesian Bores. No. 141.

Ravensbourne. *See under* Crow's Nest.

—— Bore. *See under* Artesian Bores. No. 367.

Ravenswood Goldfield—

Situation: *See maps*, Pls. 16, 17, 29. *Cos.* Davenport, Elphinstone, Murray, and Wilkie Gray; *Dist.* Kennedy North. Centre—about *Lat.* 20° 05′ S., *Long.* 146° 52′ E.

Discovery: Gold was found at Middle Camp in 1868 by Buchanan and party. A rush to the field took place from Mt. Wyatt in 1869, but the most important development occurred in 1870. Silver Lodes were found by King, at Totley's, in 1879. *See* History of Ravenswood, by F. Vaughan, in Ann. Rep. Mines Dep., 1891.

Population: 3,028 (estimated by Warden, 1912).

Proclamation of Field: First gazetted, 3rd November, 1870; last gazetted, 4th January, 1911, as follows:—Commencing on the north bank of the Burdekin River near a tree marked broad-arrow over B over 25 about two miles and twenty chains upstream from junction of Glenroy Creek and the Burdekin River, and bounded thence on the east by a line north to the Leichhardt Range, by that range north-westerly about twenty-two miles to a point due south from the south-west corner of Hillsborough Block; thence by a line bearing 340 degrees for about ten miles; thence by another line west to Hervey Range, by that range north-westerly to the eastern boundary of Warwick Block; thence by a line south-westerly to the road from Ravenswood Junction to the Star Silver Mines, by that road north-westerly to the southern boundary of Fanning River Holding, by that boundary to the eastern boundary of Arthur's Peak Block, by the eastern boundary of that block and Dotswood Block northerly to the north-east corner of a camping and water reserve R. 13, by the northern boundary of that reserve westerly to the western bank of Keelbottom Creek, by that creek upwards to the southern boundary of Watershed Block; thence westerly and northerly by part of the southern and western boundaries of that block, the western boundary of Watershed North Block, and a line north to the head of a creek north of Melon Creek, by that creek downwards to the Little Star River, by that river downwards to Dinner Creek; thence upwards along that creek and Jupiter Creek to a point north of the north-west corner of Dotswood Holding, portion B, by a line south thereto; thence south-easterly along the north-eastern boundary of that holding to Keelbottom Creek, by that creek upwards about two miles to the north of the south-west corner of camping and water reserve, R. 13; thence by a line south to the northern boundary of Burdekin Downs Block; thence easterly and southerly by part of the north and part of the east boundaries of that block to a point about sixty chains south from the north-east corner of same; thence by a line east to the eastern bank of the Fanning River, by that river downwards to the south-west corner of portion 2v, parish of Burdekin; thence by a line south to the southern boundary of portion 3v, same parish, by the southern boundary of that portion easterly to the south-western watershed of Pandanus Creek, by that watershed south-easterly to the north-western corner of Bosworth Block, by the western boundary of that block southerly to the Burdekin River, by that river downwards to the eastern boundary of same block; thence northerly to the south-western watershed of Pandanus Creek, by that watershed south-easterly to the confluence of Pandanus Creek and Burdekin River, by the Burdekin River downwards to a point north of the north-west corner of Dreghorn Block; thence by a line south passing along the western boundary of that block to the north-east corner of Cardigan No. 2 Block; thence westerly and southerly by the northern and western boundaries of that block to the south-east corner of Spring Creek No. 2 Block, by the southern boundaries of that block and Spring Creek No. 1 Block to the southern watershed of the Burdekin River; thence by that watershed south-easterly to the confluence of the Suttor and Burdekin Rivers; thence by a line east to the east bank of the Burdekin River, and by that river downwards to the point of commencement.

Ravenswood Goldfield—*continued:*

Area: 1,024,000 acres = 1,600 sq. miles.

Leases: Gold Mining Leases and Applications in force, 24; area, 486 acres. Mineral Leases and Applications, 4; area, 110 acres. Miners' Homestead Leases and Applications, 440; area, 2,414 acres (1912).

Principal Mining Centres: Ravenswood Township, Sandy Creek, Four-mile Creek, Hillsborough (Eight-mile), Donnybrook. Trieste, Fish Creek, Canton, Kirk Diggings, One-mile, *which see.*

Mineral Statistics:—

Gold,	*see tables and diagram,* Pls. 36, 46, 46A, 47.
Silver,	*see tables* Pls. 37, 46, 46A.
Antimony,	,, ,, ,, 40, 46, 46A.
Bismuth,	,, ,, ,, 40, 46, 46A.
Molybdenite,	,, ,, ,, 42, 46, 46A.

Statistcal Note: Greatest recorded annual gold yield was in 1905, being 42,465 fine oz., and valued at £180,380. Smallest recorded amount of gold yield was in 1882, being 6,973 fine oz., and valued at £29,619. To the end of 1877 the yield of gold from the Ravenswood Goldfield was returned at 154,094 fine oz. From 1878 to 1896 the returns of the field fluctuated considerably, varying between 8,000 oz. and 12,000 oz. During subsequent years the yields improved, the amount increasing to 35,806 fine oz. in 1908. Total yield of gold to the end of 1912 is 822,275 ozs., valued at £3,492,799. This is equal to 4·65 per cent of the whole gold production of the State.

Mineral References: Gold (alluvial) *see* 3262-3264, (reef) 4008, 4043, 4080; Silver 7484-7487, (Stephanite) 7603; Lead (Azurite) 214A, (Cerusite) 1227-1229, (Galena) 2924-2945; Copper (Chancanthite) 1332, (Copper Pyrites) 2222A-2234, (Malachite) 6288, 6288A, (Tenorite) 7730, (Tetrahedrite) 7771; Antimony (Stibnite), 7642-7645; Cadmium Blende, 440; Zinc Blende, 8138-8155; Iron (Hematite) 4743, (Iron Pyrites) 5235-5259, (Mispickel) 6745-6748, (Pyrrhotite) 7161; Other Minerals—Barytes, 274; Calcite, 503; Muscovite, 6894; Steatite, 7691.

Geological Note: The gold-bearing reefs are found in an area of normal and hornblende granites, while outside this area to the east of the town there are greywackes, slates, and altered sandstones. Dykes of felsite traverse the granites, and high quartz blows form conspicuous outcrops. *See* G.S.Q. Pub. No. 152 for details.

Geological Publications: Reports—Nos. 152 (1900), 156 (1901), 183 (1903). *See* Geol. Surv. Pub. List for titles; *also* Supplementary Report List, No. 142. For Plans of Leases, etc., in Ann. Reports, *see* List *under* Department of Mines.

Warden: Stationed at Ravenswood; Inspector of Mines: Stationed at Charters Towers.

Reports (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Smelting Works: (Pinnacles). *See under* Smelting Works in Queensland.

Crushing Mills: 14 Batteries (138 Stamps).

General Information: Consult *Pugh's Almanac, Queensland Post Office Directory,* and *Post and Telegraph Guide.* Official Monthly News, *Queensland Government Mining Journal* (Brisbane).

Local Newspaper: *Mining Journal.*

—— Junction (Gt. Northern line), 54 miles (by rail) S.byW. of Townsville.

—— Mines. Report on. *See under* Govt. Ming. Jour., Report No. 9.

—— Ore. *See under* Govt. Ming. Jour., Report No. 7.

Ravenswood Township, 78 miles (by rail) S. of Townsville. Reefs about the town include Barron, Black Jack, Buck, Duke of Edinburgh, Eastern, General Grant, Hector, Jolly Waterman, London, Melaneur, Mt. Pleasant, New England, Red Streak, Saratoga, Sarsfield, Shelmalier, Sunset, and Wild Irish Girl.

Railway Base for Piccadilly, Strathalbyn, and Mt. Wyatt Goldfields, Star River (Argentine) Mineral Field, Fanning, Far Fanning, and Mt. Success Gold Mines.

Mineral References: Calcite, *see* 503; Copper Pyrites, 2227-2231; Galena, 2917-2930; Gold, 4015-4032; Iron Pyrites, 5238-5249; Malachite, 6288; Mispickel, 6746-6748; Muscovite, 6894; Stibnite, 7642; Tenorite, 7730; Zinc Blende, 8138-8146.

—— Silver M. Co.'s Mine, Ravenswood. *Min.Ref.* Cerussite, *see* 1228; Galena, 2937; Gold, 4016; Silver, 7486.

—— Gt. Extd. Silver Mine, Ravenswood Goldfield. *Min.Ref.* Tetrahedrite, *see* 7771.

Rawbelle Co. Burnett Dist. *See map*, Pl. 4.

Rawbelle Mineral Field. *See maps*, Pls. 4, 5. About 30 miles N.N.W. of Eidsvold. Centre—about *Lat.* 25° 5′, *Long.* 150° 48′. *Includes* Rawbelle Copper Mine. *Min.Ref.* Copper Ore, *see* 2024A; Galena, 2731. *Geol. Note:* Rocks are made up of slates, tuffs, greywackes, etc., of Gympie Formation (Permo-Carboniferous). Large lodes in these rocks contain copper, gold, and silver.

Ready Rhino Group, Cloncurry. *Includes* Highland Mary M.L., Ready Rhino M.L., Junction M.L., Forgee-me-Not M.L., Violet M.L., Coronet M.L., and White Rose M.L. *Min.Ref.* Chrysocolla, *see* 1507; Copper Pyrites, 2094; Cuprite, 2408; Limonite, 5784-5787; Malachite, 6145-6148; Redruthite, 7245, 7246; Turgite, 7884.

—— —— M.L. (320), Cloncurry. *Min.Ref.* Cuprite, *see* 2408; Limonite, 5786; Malachite, 6147; Redruthite, 7246.

Reay Bore. *See under* Artesian Bores. No. 193.

Recompense Reef, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3680.

Reconstruction Mine, Horn Is. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3239, (reef) 3821.

Recovery Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4298.

Red Flats, Green Hills Goldfield. *Min.Ref.* Gold (alluvial) *see* 3214, (reef) 3745.

—— Ground, Black Ridge, Clermont. *Min.Ref.* Gold (alluvial), *see* 3315.

—— Hill, Capeville, Cape R. Goldfield. *Min.Ref.* Gold, *see* 3265.

—— ——, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1163A.

—— Hills, Mungana Rail. Stn. (Chillagoe line). *Min.Ref.* Hematite, *see* 4719; Limonite, 5844.

Red Ochre. *See* Hematite, Minium.

Red Queen Mine, nr. Taromeo. *Min.Ref.* Native Copper, *see* 2008; Gold, 4204; Malachite, 6347; Silver (native), 7562. *See also under* Govt. Ming. Jour., Report No. 1.

—— River, Walsh and Tinaroo Mineral Fields. *Min.Ref.* Cassiterite, *see* 957; Wolfram, 7980.

—— Rock Creek, br. of Severn R., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1008, 1009; Chrysocolla, 1521; Copper Pyrites, 2190; Mispickel, 6725. Wolfram, 7997.

—— Rover Lease (179), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1255; Manganese-dioxide, 6442.

—— Streak Reef, Yatton Goldfield. *Min.Ref.* Calcite, *see* 514; Chalcanthite, 1336; Copper Pyrites, 2270; Gold, 4177; Orthoclase, 7049.

——, White, and Blue Mine, Paddy's Gully, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4052.

—— Jack Flat, Top Camp Diggings, Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3180.

—— King Tin Mine, Irvinebank. *Min.Ref.* Cassiterite, *see* 869.

Redan Bore. *See under* Artesian Bores. No. 195.

—— Reef, Aurora Cr., Etheridge Goldfield. *Min.Ref.* Galena, *see* 2745; Gold, 3717; Iron Pyrites, 5038.

Redbank (Woogaroo Cr.), S.W.byS. of Brisbane. *Min.Ref.* Gypsum, *see* 4630.

Redbank. Par. of (Por. 122), 4 miles N.E. of Kingston Rail. Stn. *Min.Ref.* Coal, *see* 1772.

—— Creek, 3 miles W. of Tiaro Rail. Stn. (Maryborough-Gympie line). *Min.Ref.* Coal, *see* 1819.

—— Plains, nr. Ipswich Rail. line. Discovery—Coal found here by Mr. Andrew Petrie, in 1843. *Min.Ref.* Oil-bearing Shale, *see* 6915.

—— —— Bores (no record). *See note under* Ipswich Coalfield, *under* Coal Bores.

Redcap Creek. *See map*, Pls, 8, 9, 22. 3 miles N.E. of Mungana, *Min.Ref.* Azurite, *see* 200; Cerussite, 1209-1211; Chrysocolla, 1520; Copper Ore, 2032, 2033; Copper Pyrites, 2176; Cuprite, 2441; Galena, 2807-2809; Garnet, 3112; Hematite, 4718; Ironstone, 5531; Limestone, 640; Limonite, 5845 Lithomarge, 5709; Malachite, 6240-6243; Manganese-dioxide, 6411; Minium, 6590, 6591; Pyrolusite, 7119; Pyrrhotite, 7157; Siderite, 7407; Silver, 7465, 7466; Tetrahedrite, 7767; Wollastonite, 8043; Zinc Blende, 8088.

Redcliffe, Moreton Bay. *Min.Ref.* Chalcedony, *see* 1357.

Geological Note: The rocks comprise sandstone and ferruginous clays and shales belonging to the Ipswich Series (Trias-Jura). Coaly shales are said to occur somewhere along the shores of Deception Bay to the north.

—— Sub-artesian Bores. *See under* Artesian Bores. Nos. 376, 377.

Reddle. *Var.* of Hematite, *which see.*

Redhead Bore. *See under* Artesian Bores. No. 432.

Redland (Par. of), Por. 22. *Min.Ref.* Coal, *see* 1772.

Redruthite. *Syn.* Chalcocite, Copper Glance, Grey Copper Ore (*in part*). *Compo.*, Sulphide of copper. *Colour and Streak*, blackish, lead-grey. *Lustre*, metallic. *H.* = 2·5-3. *Sp.gr.* = 5·5-5·8. *Contents* (*max.*), Copper 79 per cent..

7201. ——. *Assoc.with* Copper Pyrites and Limonite. *Loc.* 4 miles W. of Blackeye Springs, McKinlay, 68 miles S.E.byE. of **Cloncurry.** *Co.* Allison; *Dist.* **Burke.** *Ref.* A.R., p. 107 (1907).

7202. ——. *Assoc.with* Copper carbonate, in lode. *Loc.* Argylla M.F. (3073), Argylla Cr., 40 miles W. of Cloncurry. *Co.* Argylla; *Dist.* Burke. *Assays:* Copper = 15·95 and 35·2 per cent. *Ref.* G.S.Q. Pub. 153, p. 8 (1900).

7203. ——. *Assoc.with* Gold. *Loc.* S. of Lease (61), Dugald R., 45 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 153, p. 8 (1900).

7204. ——. *Assoc.with* Azurite, Malachite, Ironstone, Ilmenite, Calcite, Biotite, and Chlorite, in granite, quartz felspar, and schist. *Loc.* Mavis M.L. (315), Longamundi Group, Cattle Cr., Dugald R., 38 miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 283, 284 (1908).

7204a. ——. *Assoc.with* Copper Pyrites, Malachite, Limonite, and Actinolite, in gossan and schist. *Loc.* Melba M.L. (319) (Melba Group), Corella R., 39 miles W.S.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 210 (1908).

7205. ——. *Assoc.with* Malachite and Limonite, in quartzite, schist, and gossan. *Loc.* Ruth M.L. (335) (Mt. Remarkable Group), Bullock Head Cr., Glenroy, Leichhardt R., 51 miles W.N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 291, 292 (1908).

7206. ——. *Assoc.with* Copper Pyrites and Chrysocolla, in quartz, slate, and schist, *Loc.* Native Companion P.C. (19) (Native Companion Group), Palm Tree Cr., 26½ miles N.W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 273 (1908).

7206a. ——. In lode. *Loc.* Sunset M.L. (267) (Sunset Group), 10 miles N.byW. of Spring's Camp, Corella R., 33 miles W. of Cloncurry. *Co.* Argylla (*ante*). *Ref.* G.S.Q. Pub. 215, p. 214 (1908).

7207. ——. *Assoc.with* Malachite, in quartz. *Loc.* Lady Mina M.L. (552) (Gt. Australia Group), 3 miles E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 254 (1908).

7207a. ——. *Assoc.with* Bornite, Tile Ore, and Iron Pyrites, in quartz. *Loc.* Monakoff M.F. (15) (Monakoff Group), Courtenay Cr., Pumpkin Gully, 13½ miles E.N.E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 239 (1908).

7208. ——. *Assoc.with* Copper carbonate, Cuprite, Bornite, Chrysocolla, and Ironstone. *Loc.* Mt. Douglas or Pumpkin Gully Leases, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 153, pp. 6, 7 (1900).

7208A. Redruthite. *Assoc.with* Cuprite, Tile Ore, Chrysocolla, Malachite, and Limonite, in quartz and quartzite. *Loc.* Rocklands Group of Copper Mines, between Butcher and Morris Crs., 9 miles W. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 258-265 (1908).

7208B.——. *Assoc.with* Cuprite, Tile Ore, Malachite, and Limonite, in gossan and quartzite. *Loc.* Chum M.C. (329), Serpent Hill Group, Morris Cr., 4½ to 5½ miles W.S.W. of Cloncurry. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 256 (1908).

7209. ——. *Assoc.with* Copper Pyrites, Tile Ore, and Limonte, in slate (?). *Loc.* Eclipse M.L. (571) (Eclipse Group), E. of Dromedary Range, 12 miles N.W. of Donaldson, 70 miles N.byW. of Cloncurry. *Co.* Granada; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 355, 356 (1908).

7210. ——. *Assoc.with* Tile Ore, Malachite, and Actinolite, in ironstone. *Loc.* Wanderer M.L. (622), Eclipse Group, N.W. of Donaldson (*ante*). *Ref.* G.S.Q. Pub. 215, p. 357 (1908).

7211. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, Chrysocolla, Hematite, Limonite, and Turgite, in quartz, calcite, and gossan. Belfast M.L. (303) (Belfast Group), Cone Cr., 10 chains S.E. of Cloncury Road, 2 miles N.N.E. of Mt. Start, 21 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 120-122 (1908).

7212. ——. *Assoc.with* Malachite, Azurite, and Limonite, in quartz and schist. *Loc.* Boomerang M.C. (162) (Boomerang Group), W. side of Cone Cr., 2 miles N.N.W. of Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 99, 100 (1908).

7213. ——. *Assoc.with* Copper Pyrites, Tile Ore, Chrysocolla, Hematite, and Limonite, in quartz and ferro-calcite. *Loc.* Policeman M.C. (206), Boomerang Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 100, 101 (1908).

7214. ——. *Assoc.with* Tile Ore and Malachite, in quartz and quartzite. *Loc.* Columbiad M.L. (500) (Columbiad Group), 1¼ mile S.W. of Mt. Start, Duck Creek, 24½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 141, 142 (1908).

7215. ——. *Assoc.with* Malachite, Limonite, and Göthite and traces of Gold and Silver, in quartz and schist. *Loc.* Mountain Maid M.L. (526), Columbiad Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 140, 141 (1908).

7216. ——. *Assoc.with* Cuprite, Tile Ore, Malachite, and Limonite, in quartz and schist. *Loc.* Buttercup M.L. (496), Daisy Group, Duck Cr., nr. Mt. Start, 22 miles S.S.W. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 109, 110 (1908).

7217. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Cuprite, Tile Ore, Malachite, Limonite, Calcite, Actinolite, Chlorite, and Epidote, in quartz, chloritis schist, and calcareous tufa. *Loc.* Daisy United M.C (155), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 106-108 (1908).

7218. ——. *Assoc.with* Malachite, in quartz and chloritic schist. *Loc.* Meteor M.C. (145), Daisy Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 105, 106 (1908).

7219. ——. *Assoc.with* Tile Ore, Malachite, and Limonite, in quartz and chloritic schist. *Loc.* Balfour Extd. Claim (257) (Diagonal Group), Duck Cr., 1 mile W.S.W. of Mt. Start, 24 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Assay: See* No. 6112. *Ref.* G.S.Q. Pub. 215, pp. 138, 139 (1908).

7220. ——. *Assoc.with* Tile Ore and Malachite, in quartz and chloritic schist. *Loc.* Diagonal M.F. (2457), Diagonal Group, Duck Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 135, 136 (1908).

7221. ——. *Assoc.with* Gold, Copper Pyrites, Tile Ore, Azurite, Malachite, and Limonite, in chloritic schist. *Loc.* Pioneer M.L. (229) (Diagonal Group) (*ante*). *Assay: See* No. 2077. *Ref.* G.S.Q. Pub. 215, pp. 132-135 (1908).

7222. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Limonite, in schist and quartz. *Loc.* Prospector's M.L. (182), Diagonal Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 136-138 (1908).

7223. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, Azurite, and Chrysocolla, in gossan, quartz, and quartzite. *Loc.* Captain M.L., Eva Group, Duck Cr., 24 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 159, 159 (1908).

7224. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Chrysocolla, in quartz and calcite. *Loc.* Commonwealth M.C. (330), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 158 (1908).

7225. ——. *Assoc.with* Copper Pyrites, Tile Ore, Azurite, Iron Pyrites, Limonite, and Calcite, in quartz, slate, and schist. *Loc.* Eva M.L. (240), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 152-154 (1908).

7226. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, Calcite, and Chlorite, in chloritic schist, gossan, and quartzite. *Loc.* Eva Extd. M.L. (283), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 155 (1908).

7227. ——. *Assoc.with* Tile Ore and Malachite, in chloritic schist. *Loc.* Phœnix M.C. (340), Eva Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 157 (1908).

7228. ——. *Assoc.with* Native Copper, Copper Pyrites, Malachite, Chrysocolla, Iron Pyrites, Limonite, Turgite, Ferro-Calcite, and Calcite. *Loc.* Florence R. Copper Mines, ½-mile W. of Hampden Rd., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 69-78 (1908).

7229. ——. *Assoc.with* Cuprite, in kaolin lode. *Loc.* Hampden Copper Mine, Hampden Group, 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 153, p. 4 (1900).

7230. ——. *Assoc.with* Copper Pyrites, Cuprite, Tenorite, Malachite, Chrysocolla, Iron Pyrites, and Kaolin, in gossan, slate, and diorite. *Loc.* Hampden M.Ls. (244, 245, etc.), Hampden Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 49-60 (1908).

7231. ——. *Assoc.with* Cuprite, Malachite, and Limonite, in slate and gossan. *Loc.* Block (15), M.Ls. (246 and 409), Hampden Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 60, 61 (1908).

7232. ——. *Assoc.with* Copper Pyrites, Malachite, Limonite, Manganese-dioxide, and Calcite, in limestone, quartz, and schist. *Loc.* Hilda M.L. (242) (Hilda Group), Slaty Cr., 20 miles S.W.byS. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 183, 184 (1908).

7233. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Calcite, in schist and limestone. *Loc.* Mascotte Claim (319), Hilda Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 184, 185 (1908).

7234. ——. *Assoc.with* Tile Ore, Malachite, and Limonite, in ferruginous quartzite and schist. *Loc.* Just-in-Time M.L. (237) (Just-in-Time Group), 1 mile S. of Malbon R., 30 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 82, 83 (1908).

7235. ——. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in quartzose schist. *Loc.* Just-in-Time 1 E. M.L. (473) (Just-in-Time Group) (*ante*). *Ref.* G.S.Q. Pub. 215, p. 84 (1908).

7236. ——. *Assoc.with* Cuprite, Tile Ore, Malachite, and Limonite, in quartz, quartzite, and slate. *Loc.* Malbon M.F. (2548), Just-in-Time Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 79-81 (1908).

7236A. ——. *Assoc.with* Malachite, Chrysocolla, and Limonite, in quartzite and schist. *Loc.* Lady Jenny M.L. (234) (Lady Group), Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 195 (1908).

7236B. ——. *Assoc.with* Tile Ore, Azurite, Malachite, and Limonite, in quartz and schist. *Loc.* Morning Star M.L. (306), Lady Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 199 (1908).

7237. ——. *Assoc.with* Native Copper, Cuprite, Malachite, Cyanochalcite, Limonite, Calcite, and Ferro-Calcite, in granular limestone. *Loc.* Dandy P.A. (297) (McPhail Group), 2 miles S. of Florence R., 33 miles S. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 76, 77 (1908).

7238. ——. *Assoc.with* Copper Pyrites, Malachite, Azurite, and Limonite. *Loc.* Erin-go-Bragh Extd. M.C. (372) (McPhail Group), 2 miles N. of Florence R., 31 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 77, 78 (1908).

7239. ——. *Assoc.with* Copper Pyrites, Malachite, Chrysocolla, and Limonite, in gossan, quartzite, and schist. *Loc.* McPhail M.L. (474) (McPhail Group), Florence R., 33 miles S. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 70-72 (1908).

7240. ——. *Assoc.with* Malachite, Chrysocolla, Dioptase, Iron Pyrites, Turgite, and Limonite, in gossan and schist. *Loc.* Trump Extd. M.C. (368) (McPhail Group), Florence R., 34 miles S. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 73-76 (1908).

7241. ——. *Assoc.with* Tile Ore, Malachite, Azurite, and Limonite, in schist, quartzite, and slate. *Loc.* Monitor M.L. (419), ½-mile from Cloncurry R., 44 miles S. of Cloncurry, Monitor Group. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 65 (1908).

7241A. ——. *Assoc.with* Copper Pyrites, Native Copper, Cuprite, and Molybdenite, in lode formation. *Loc.* May Graham P.A., 4 miles W. of Soldier's Cap, about 33 miles (by road) S.E. of Cloncurry, Mt. Wheeler Group. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 225 (1908).

7241A1. ——. *Assoc.with* Malachite, Iron Pyrites, and Limonite, in schist. *Loc.* Pearl M.C. (106) (Pearl Group), Corella R., 34 miles W.byS. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 188 (1908).

7241B. ——. *Assoc.with* Copper Pyrites, Tile Ore, Chrysocolla, Hematite, and Hypersthene, in slate and gossan. *Loc.* Spring's Peak M.L. (562), Pearl Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 189 (1908).

7242. Redruthite.. *Assoc.with* Tile Ore, in quartz and chloritic schist. *Loc.* Blue Bell Copper M.L. (609) (Pioneer Chief Group), W. of Cone Cr., ½-mile N. of Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 131, 132 (1908).

7243. ——. *Assoc.with* Malachite, Turgite, Siderite, and traces of Gold and Silver, in quartz and chloritic schist. *Loc.* Noontide Copper M.L. (239), Pioneer Chief Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 129-131 (1905).

7244. ——. *Assoc.with* Native Copper, Copper Pyrites, Tile Ore, Malachite, Iron Pyrites, and Limonite, in slate. *Loc.* Pioneer Chief M.L. (231), Pioneer Chief Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 123, 124 (1908).

7245. ——. *Assoc.with* Copper Pyrites, Malachite, Chrysocolla, Limonite, and Turgite, in quartz and slate. *Loc.* Highland Mary Copper M.L. (531) (Ready Rhino Group), Duck Cr., 22 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 91-93 (1908).

7246. ——. *Assoc.with* Cuprite, Malachite, and Limonite, in quartz and schist. *Loc.* Ready Rhino M.L. (320), Ready Rhino Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 93-95 (1908).

7246A.——. In lode. *Loc.* Spring's M.L. (411) (Spring's Group), Corella R., 1 mile N.W. of Spring's Camp, 36 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 193 (1908).

7247. ——. *Assoc.with* Native Copper, Copper Pyrites, Tile Ore, Malachite, Chrysocolla, Iron Pyrites, and Limonite, in schist, slate, and quartzite. *Loc.* Banjo M.L. (590) (Tambourine Group), 3 miles N. of Duck Cr., Corella Road, 26 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 167, 168 (1908).

7248. ——. *Assoc.with* Copper Pyrites, Azurite, Malachite, Chrysocolla, Iron Pyrites, Limonite, and Tourmaline, in quartz, slate, and schist. *Loc.* Tambourine R.C. (286), Tambourine Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 166, 167 (1908).

7249. ——. *Assoc.with* Copper Pyrites, Malachite, Chrysocolla, Limonite, and Turgite, in quartz and schist. *Loc.* Brilliant M.L. (588) (Tharsis Group), Cone Cr., 1½ mile N.W. of Mt. Start, 18 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 114, 115 (1908).

7250. ——. *Assoc.with* Tile Ore, Malachite, and Iron Pyrites, in quartz and schist. *Loc.* Tharsis Copper M. Lease (240) (Tharsis Group), Cone Cr., 20 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Assay:* 2,526. *Ref.* G.S.Q. Pub. 215, pp. 117-120 (1908).

7251. ——. *Assoc.with* Copper Pyrites and Limonite, in chloritic slate. *Loc.* Resurgam M.L. (399), Timberoo Group, Slaty Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 175-177 (1908).

7252. ——. *Assoc.with* Copper Pyrites, Bornite, Tile Ore, Malachite, Iron Pyrites, Hematite, Limonite, Calcite, and Muscovite, in quartz slate, and schist. *Loc.* Timberoo M.L. (716), Timberoo Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 172-175 (1908).

7253. ——. *Assoc.with* Tile Ore, Azurite, Malachite, and Limonite, in gossany quartz and schist. *Loc.* Wallaroo M.L. (592), Wee Macgregor Group, Corella R., 38 miles W.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 202-205 (1908).

7254. ——. *Assoc.with* Gold, Iron Pyrites, Cerussite, Chalcotrichite, and Galena, in quartz. *Loc.* Mountain Maid Reef, 2¾ miles N.N.E. of Croydon Rail. Stn., 96¾ miles (by rail and road) S.E. of Normanton. *Co.* Surrey; *Dist.* Burke. *Ref.* B.D.

7255. ——. *Assoc.with* Malachite and Limonite, in schist. *Loc.* Iguana M.C. (268), Bull Cr. Group, Coolullah Run, 74 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 349 (1908).

7256. ——. *Assoc.with* Native Copper, Cuprite, Tetrahedrite, Malachite, Iron Pyrites, Hematite, Magnetite, and Limonite, in quartz and schist. *Loc.* Crusader M.F. (2549), Crusader Group, Coolullah Run, E. of Coppermine Cr., 68½ miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Assay:* Copper = 5·3 per cent. *Ref.* G.S.Q. Pubs. 10, p. 8 (1885), 215, pp. 334, 335 (1908).

7257. ——. *Assoc.with* Malachite, in gossany quartz. *Loc.* Orphan M.F. (667) (Crusader Group), Coolullah Run, E. of Coppermine Cr. (*ante*). *Ref.* G.S.Q. Pub. 215, p. 336 (1908).

7258. ——. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in quartz. *Loc.* Bauhinia M.C. (347) (Dobbyn Group), 3½ miles W.N.W. of Crusader Freeholds, Coolullah, 70½ miles N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 348 (1908).

7259. ——. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in schist. *Loc.* Dobbyn No. 1 S. M.L. (662), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 341 (1908).

7260. ——. *Assoc.with* Tile Ore, Malachite, and Limonite, in gossany quartz. *Loc.* Flaneur M.L. (655), Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 655 (1908).

7261. ——. *Assoc.with* Copper Pyrites, Malachite, Limonite, Calcite, and Ferro-Calcite, in quartz. *Loc.* Glenferrie P.A. (300), nr. Old Man Cr., Dobbyn Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 344 (1908).

7262. ——. *Assoc.with* Copper Pyrites, Tile Ore, Azurite, Malachite, Chrysocolla, and Limonite, in schist, slate, and gossan. *Loc.* Mighty Atom M.L. (274), between 6-Mile and Coppermine Crs., Leichhardt R., 42 miles N.W.byW. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 304-306 (1908).

7263. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Limonite, in gossan and quartz. *Loc.* Mt. Bornite M.L. (376), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 309, 310 (1908).

7264. ——. *Assoc.with* Copper Pyrites, Cuprite, Tile Ore, Malachite, and Limonite, in slate, schist, and gossan. *Loc.* Mt. Millicent M.L. (663), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 307, 308 (1908).

7265. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Limonite, in slate and kaolin. *Loc.* Mt. Millicent S. M.L. (664), Mighty Atom Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 308, 309 (1908).

7266. ——. *Assoc.with* Copper Pyrites, Cuprite, Tile Ore, Malachite, Chrysocolla, and Limonite, in quartz, gossan, and schist. *Loc.* Mt. Cuthbert No. 1 N. M.L. (381) (Mt. Cuthbert Group), 6-Mile Cr., Leichhardt R., 19 miles S.W. of Coolullah H.S. *Co.* Tewinga (*ante*).

7267. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Tile Ore, Tenorite, Malachite, Iron Pyrites, and Limonite, in slate and gossan. *Loc.* Mt. Metallic R.C. (310) (Mt. Metallic Group), Prospector Cr., trib. of Leichhardt R., 52 miles W.N.W. of Cloncurry. *Co.* Tewinga (*ante*). *Assay: See* No. 2115. *Ref.* G.S.Q. Pub. 215, pp. 295-299 (1908).

7268. ——. *Assoc.with* Copper Pyrites, Malachite, Calcite, and Jasper, in quartz, gossan, and slate. *Loc.* Queenslander M.L. (436), Mt. Metallic Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 297-299 (1908).

7269. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Limonite, in quartz, gossan, and slate. Chance P.O. (283), St. Paul's Cr. Group, Leichhardt R., Coolullah, 78 miles N.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 353 (1908).

7270. ——. *Assoc.with* Copper Pyrites and Limonite, in kaolin. *Loc.* Queen Bee M.C. (278), St. Paul's Cr. Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 354 (1908).

7271. ——. *Assoc.with* Tile Ore and Malachite, in chloritic schist. *Loc.* Rosette M.L. (638), St. Paul's Cr. Group (*ante*). *Ref.* G.S.Q. Pub. 215, p. 351 (1908).

7272. ——. *Assoc.with* Copper Pyrites, Limonite, and Calcite, in quartz and schist. *Loc.* Hare's Excelsior M.L. (?), Von Bremen's Group, St. Paul's Cr., Leichhardt R., Coolullah, 70 miles N.W.byN. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 327, 328 (1908).

7273. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Limonite, in schist, gossan, and quartz. *Loc.* Isabella M.C. (360), Von Bremen's Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 325, 326 (1908).

——. *See* 7285, etc., for other Cloncurry references.

7274. ——. Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M.

7275. ——. *Assoc.with* Gold, Silver, and Argentite. *Loc.* Commonwealth Mine, nr. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Average of 10 Assays:* Gold = 20 gr. per ton; Silver = 15 oz. 8 dwt. 12 gr. per ton; Copper = 3·3 per cent. *Ref.* A.R., p. 58 (1906).

7276. ——. *Assoc.with* Galena and Limonite, in lode. *Loc.* Girl-I-Left-Behind-Me Mine, Stanton-Harcourt Diggings, 11 miles N. of Degilbo Rail. Stn.(Gayndah line), 69 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 168, p. 3 (1901).

7276A.——. *Assoc.with* Malachite, Azurite, Ironstone, Barytes, and Calcite. *Loc.* Burnett Range, nr. Gaeta, about 23 miles N.byW. of Mt. Perry Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* A.R. 263 (1910).

7277. ——. *Assoc.with* Gold, Anglesite, Zinc Blende, and Iron Pyrites, in quartz reef. *Loc.* Victory United Lease (33), Augusta Maid of Erin Shaft, Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol (*ante*).

7278. Redruthite. Mt. Molloy Copper Mine, 20 miles (by rail) N.N.W. of Biboohra Rail. Stn. (Cairns line), **Walsh and Tinaroo Mineral Fields.** *Co.* Dagmar; *Dist.* **Cook.** *Ref.* G.S.M.

7278A. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, Mispickel, and Zinc Blende, in quartz lode. *Loc.* Nil Desperandum Mine, Charleston, 140 miles (by rail) S.W. of Almaden Rail. Stn., Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), 151, p. 11 (1900), and 219, p. 14 (1909).

7279. ——. *Assoc.with* Copper carbonate, in quartz. *Loc.* P.P.A. No. 2, Otho Camp, 4 miles N.W. of Calcifer Rail. Stn. (Chillagoe line), 137 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 10 (1898).

7280. ——. *Assoc.with* Copper Pyrites, Cuprite, Malachite, Azurite, Chrysocolla, Garnet, and Fluorspar, in felspathic rock. *Loc.* Dorothy Mine, Opera Cr., 1½ mile S.E. of Mungana Rail. Stn. (Chillagoe line), 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 2 (1891), and P.R.S.Q., vol. 15, p. 51 (1900).

7280A. ——. *Assoc.with* Copper Pyrites, Bornite, Malachite, Azurite, Hematite, Limonite, Cinnabar, and Jasper, in quartz and calcite. *Loc.* St. George Copper and Coal Mines, Little R., 31 miles S.W.byW. of Laura Rail. Stn. (Cooktown line). *Co.* Mosman; *Dist.* Cook. *Ref.* G.S.Q. Pub. 222, pp. 21-32 (1910).

7281. ——. *Assoc.with* Copper carbonate and Cerussite, in basalt and gneiss. Between Brookland No. 2 and No. 3, Junction Cr., Einasleigh R., 30 miles S. of Fossilbrook. *Co.* Tate; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 20 (1898).

7281A. ——. *Assoc.with* Tile Ore, Malachite, and Azurite, in quartz lode. *Loc.* Ortona Copper Mines, S. bank of Percy R., 13 miles N.W. of Gilberton, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* G.S.Q. Pub. 219, pp. 17-19 (1909).

7282. ——. *Assoc.with* Gold, Cuprite, and Copper carbonate, in lode. *Loc.* Percy R., above its junction with Gilbert R., 41 miles S. of Charleston Rail. Stn. (Etheridge line). *Co.* Victor; *Dist.* Cook. *Assay:* Copper = 59 per cent. and 54 per cent. *Ref.* G.S.Q. Pub. 151, p. 13 (1900).

7283. ——. *Assoc.with* Copper Pyrites, Copper carbonate, Galena, Zinc Blende, Ironstone, Manganese-dioxide, in lode. *Loc.* Pikedale Silver Mine, Woolshed Gully, Pikedale Hd. Stn., 20 miles W.byS. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 87 (1898).

7284. ——. *Assoc.with* Galena, Cerussite, Anglesite, and Copper carbonate, in gossan. *Loc.* Silver King Mine, 3 miles N. of Silver Spur, nr. Texas, 46 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, p. 94 (1898).

7285. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, Limonite, Calcite, and Epsomite, in quartz lode in schist and quartzite. *Loc.* Duchess M.L. (275), (Duchess Group), Jack's Creek, Burke R., 61 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 18-22 (1908).

7286. ——. *Assoc.with* Native Copper, Copper Pyrites, Tile Ore, Malachite, and Limonite, in kaolinised rock, quartz, and schist. *Loc.* Italian Copper M.L. (689), Lady Fanny Group, Wills R., 60 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 34, 35 (1908).

7287. ——. *Assoc.with* Malachite. *Loc.* Monastery M.L. (467) (Mt. Birnie Group), 5 miles W. of Mt. Birnie, 79 miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, p. 28 (1908).

7288. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Cuprite, Limonite, Malachite, and Chrysocolla, in hornblendic schist. *Loc.* Mt. Birnie M.L. (686, etc.) (Mt. Birnie Group) Mines, Burke R., 74½ miles S.S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 27, 367 (1908).

7289. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Tile Ore, Malachite, Atacamite, Limonite, and Calcite, in quartz and chloritic schist. *Loc.* Blue Jacket M.L. (632), Mt. Hope Group, 53½ miles S.W. of Cloncurry. *Co.* Chatsworth (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 43, 44 (1908).

7290. ——. *Assoc.with* Copper Pyrites, Malachite, and Limonite, in gossan, quartz, and slate. *Loc.* Little Beauty M.L. (568), nr. Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 44-47 (1908).

7291. ——. *Assoc.with* Copper Pyrites, Covelline (?), Tile Ore, Malachite, Iron Pyrites, Limonite, and Calcite, in chloritic schist. *Loc.* Monarch Senior M.C. (352), Mt. Hope Group (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 42, 43 (1908).

7292. ——. *Assoc.with* Copper carbonate, in quartz lode. *Loc.* Lease (54), Pilgrim's Cr., trib. of Burke R., 60 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Assay:* *See* No. 1907. *Ref.* G.S.Q. Pub. 153, p. 6 (1900).

7293. ——. *Assoc.with* Tile Ore, in quartz lode. *Loc.* Lease (55), Pilgrim's Cr., trib. of Burke R. (*ante*). *Assays: See* No. 2558. *Ref.* G.S.Q. Pub. 153, p. 6 (1900).

7294. ——. *Assoc.with* Copper carbonate, in lode. *Loc.* Lease (98), Pilgrim's Cr. (*ante*). *Assay: See* No. 1909. *Ref.* G.S.Q. Pub. 153, p. 6 (1900).

7295. ——. *Assoc.with* Copper Pyrites, Malachite, Chrysocolla, and Limonite, in quartz and kaolin. *Loc.* Trikelana M.L. (522) (Trikelana Group), Pilgrim Cr., 70 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215, p. 26 (1908).

7296. ——. *Assoc.with* Tile Ore, Tenorite, Iron Pyrites, and Limonite, in kaolinised slate and gossan. *Loc.* Labour Victory R.C. (29) (Agate Downs Group), 53 miles S. of Cloncurry. *Co.* Merlin; *Dist.* Gregory North. *Ref.* G.S.Q. Pub. 215. pp. 12-14 (1908).

——. *See* 7201, etc., for other Cloncurry occurrences.

7297. ——. *Assoc.with* Gold, Silver, Copper carbonate, Galena, and Iron Pyrites. in quartz. *Loc.* Main's Reef. Old Homestead Diggings, 46 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* **Kennedy North.** *Ref.* (and *Assays*) G.S.Q. Pub. 73, p. 11 (1891).

7297A. ——. *Assoc.with* Copper Pyrites, Tile Ore, Malachite, and Limonite. *Loc.* Mare's Nest Cr., Andromache R., 44 miles S.S.E. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* A.R., p. 271 (1910).

7298. ——. *Assoc.with* Cuprite and Copper carbonate, in garnet, quartz, kaolin, and gossan. *Loc.* Day Dawn Tin Lease (170), Alice Shaft, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Assay:* Silver = 265 oz. 4 dwt. 20 gr. per ton; Copper = 21·6 per cent.; Lead = trace. *Ref.* G.S.Q. Pub. 82, p. 4 (1892).

7299. ——. *Assoc.with* Galena and Zinc Blende. *Loc.* Macaulay Copper and Silver Lodes, Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 167, pp. 9, 10 (1901).

7299A. ——. *Assoc.with* Malachite, in granite. *Loc.* Dalrymple M.F. (1865), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 228, p. 22 (1910).

7299B. ——. *Assoc.with* Malachite, Azurite, Iron Pyrites, Hematite, and Limonite, in granite. *Loc.* Monarch P.P.A. (116, etc.), Mt. Flora Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 228, pp. 36-38 (1910).

7300. ——. *Assoc.with* Tenorite and Copper carbonate, in slate country. *Loc.* Balcomba Range, 24 miles N. of Duaringa Rail. Stn. (Central line), 90 miles (by rail and road) W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 159, p. 20 (1901).

7301. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Azurite, Malachite, Zinc Blende, Mispickel, and Scorodite, in quartz. *Loc.* Chandler's Reef, Norton Goldfield, 33 miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Assay: See* No. 4269. *Ref.* G.S.Q. Pub. 208, p. 18 (1907).

7302. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Galena, and Zinc Blende, in quartz. *Loc.* Goody's (Carmichael's) Reef, Norton Goldfield (*ante*). *Assay: See* 4277. *Ref.* G.S.Q. Pub. 208, p. 26 (1907).

7303. ——. *Assoc.with* Gold and Tenorite, in quartz. *Loc.* Alliance Gold Mine, Morinish Goldfield, 29 miles N.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 10 (1882).

7304. ——. Disseminated through granite. *Loc.* Moonmera Copper Mines, nr. Moonmera Rail. Stn., 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 143, p. 27, and B.D.

7305. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Mispickel, Pyrrhotite, Galena, and Stibnite. *Loc.* Mariner's Reef, Black Snake, 10 miles S. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Analysis of Ore: See* No. 2318. *Ref.* G.S.Q. Pub. 28, p. 6 (1886).

7306. ——. *Assoc.with* Copper Pyrites, Tenorite, Cuprite, Azurite, Malachite, Iron Pyrites, Hematite, and Limonite in lodes in syenitic granite. *Loc.* Calgoa Copper Mines, Thunder Cr., Calgoa Cr., 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 207, pp. 5-11 (1907).

7307. ——. *Assoc.with* Copper Pyrites. *Loc.* Marari Cr., nr. Eel Cr., 10½ miles S.S.W. of Gympie. *Co.* Lennox (*ante*). *Ref.* O.R.

7308. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Cuprite, Malachite, Bismuthinite, Magnetite, and Limonite. *Loc.* Kabonga Mine, Kilkivan, 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 125, p. 36 (1897), and G.S.M.

7309. ——. *Assoc.with* Malachite. *Loc.* Sunnyside, Mudloo, 5 miles N.N.W. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* L.C.B.

7310. Redruthite. *Assoc.with* Copper Pyrites, Cuprite, Tile Ore, Azurite, and Malachite in quartz. *Loc.* Teebar Copper Lode, N. of Munna Cr., nr. Clfton Stn., 2 miles S. of Boompa Rail. Stn. (Gayndah line), 44 miles (by rail and road) W. of Maryborough. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 7 (1890).

7311. ——. *Assoc.with* Cuprite. *Loc.* Warirata Road, 20 miles E.N.E. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.M.

——. *See also* Grey Copper Ore.

Reedy Cr., Balcomba Range. *Min.Ref.* Tetrahedrite, *see* 7776.

—— ——, Mt. Richardson, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3271.

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Reformatory (Westbrook) Bore. *See under* Artesian Bores. No. 55.

Refractory Materials. *See under* Fire-resisting Materials.

Regner and Nevan's Hole, Day Dawn Lease (No. 170), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1239; Galena, 2963.

Reid's Cr. Runs N. and E. into Emu Cr., 10 miles S.E. of Lappa Junction (Chillagoe line). *Min.Ref.* Cassiterite, *see* 952A-954.

Reid's Creek Goldfield—

Situation: Pls. 4, 5. The goldfield is 4½ miles S.W. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* Burnett.

Discovery: Gold discovered in 1879.

Population: Less than 10.

Proclamation of Field: First gazetted, 17th April, 1886; last gazetted, 24th January, 1902, as follows:—Commencing at a point on the left bank of Reid's Creek bearing west from the north-west corner of the Reid's Creek Gold Field (proclaimed in *Government Gazette*, 1886, vol. 1, page 1626), and bounded thence by a line bearing east about five miles and a-half to a point north from the west corner of portion 5v, parish of Grosvenor; thence by a line south to that corner; thence by the western boundaries of portions 5v, 6v, 7v, 8v, 9v, 10v, 11v, and 12v southerly to the south-west corner of portion 12v; thence by the south boundary of the proclaimed Reid's Creek Gold Field bearing west about six miles and a-half to the left bank of Reid's Creek; and thence by that creek upwards northerly to the point of commencement.

Area: 26,000 acres (25 sq. miles).

Mineral Statistics: Gold, *included in* "Other Goldfields" *in tables and diagram*, Pls. 36, 46, 46A, 47.

Mineral References: Gold, *see* 3590-3594; Silver, 7432; Lead (Galena), 2719, 2721A, 2722; Copper (Bornite), 417; Antimony (Stibnite) 7605, 7606; Manganese (Psilomelane), 7081; Zinc Blende, 8064, 8065; Iron (Iron Pyrites), 4991-4994, (Mispickel) 6650-6654.

Geological Note: The rocks at Reid's Creek are made up of a fine-grained micaceous granite, and evidently are connected with the granite in which the Mt. Perry Copper Lode occurs. Gold-bearing reefs occur in the granite, the gangue being made up of quartz and felspar, the ore consisting of arsenical pyrites (mispickel), with iron pyrites, zinc blende, and a little galena. *See* G.S.Q. Pub. No. 21 for details.

Geological Publications: Reports—Nos. 21 (1885), 48 (1888). *See* Geol Surv. Pub. List for title.

Warden: Stationed at Mt. Perry. Inspector of Mines: Stationed at Rockhampton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Reid's Cr. Mine, Reid's Cr. Goldfield, Mt. Perry. *Min.Ref.* Galena, *see* 2719; Gold, 3594; Iron Pyrites, 4992; Mispickel, 6652; Stibnite, 7605.

—— —— Reefs, on Branch Cr., Reid's Cr. Goldfield, Mt. Perry *Min.Ref.* Galena, *see* 2722; Gold, 3591; Iron Pyrites, 4993; Mispickel, 6653; Stibnite, 7606; Zinc Blende, 8065.

—— Gap (Philp's Siding), 30 miles (by rail) S. of Townsville. *Min.Ref.* Limestone, *see* 652 Coralline Limestone, 722; Marble, 587.

—— Manganese Workings, 8 miles W.byS. of Gladstone. *Min.Ref.* Manganese-dioxide, *see* 6467.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 214.

Renard Group of Islands, Brit. New Guinea. *Min.Ref.* Calcite, *see* 562; Limestone, 703; Coralline Limestone, 728.

Renfrew Sub-artesian Bore. *See under* Artesian Bores. No. 293.

Rennick's (Macfarlane) Sub-artesian Bore. *See under* Artesian Bores. No. 349.

Rents on Mining Holdings are payable at the Warden's Office on or before 31st December each year. If not paid until January, 5 per cent. penalty is added, if in February, 10 per cent., if in March, 15 per cent. *See* copy of "Mining Act and Regulations" for fees, etc.

Reports of Mines Department. *See* Publications *under* Department of Mines.

—— of Geologists. *See* Geol. Surv. Publications.

Republic Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1114.

Repulse Island, 46 miles N.N.W. of Mackay. *Min.Ref.* Limestone, *see* 658.

Rescue Reef, Georgetown, Etheridge Goldfild. *Min.Ref.* Gold, *see* 3732.

Reserve, Par. of Walla, nr. Gin Gin. *Min.Ref.* Kaolin, *see* 5705.

Reserve (200), Por. 26v, Par. of Palen, S.W. of Beaudesert. *Min.Ref.* Coal, *see* 1782A.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 402.

Resin Tin. *Var. of* Cassiterite, *which see.*

Result Reef, Woodville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3764.

Resurgam M.L. (399), Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2100; Limonite, 5796; Redruthite, 7251.

7312. **Retinite.** *Syn.* "Fossil Resin." As bands in coal. Tivoli Coal Mine, North Ipswich Coal Area, 24 miles (by rail) W.S.W. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* Q.M.

Retreat Creek. *See* Pl. 31. Heads at Drummond Range, 15 miles W.byN. of Withersfield Rail. Stn. (Central line), runs W. into Theresa Cr., 8 miles N. of Emerald. *Min.Ref.* Amethyst, *see* 7170; Cairngorm, 7181; Chalcedony, 1350A; Gold, 3361; Hematite, 4838; Hyacinth, 8236; Ilmenite, 4902; Jasper, 5643; Magnesite, 5951; Magnetite, 6029; Ruby, 2363; Rutile, 7335; Sapphire, 2355; Spinel, 7581; Topaz, 7806; Tourmaline, 7864; Zircon, 8236.

—— —— and Ruby Creek (between), 9 miles (by road) N.W. of Anakie. *Min.Ref.* Bornite, *see* 430B; Chalcanthite, 1335; Copper Pyrites, 2268A; Copperas, 2337; Gold, 4167; Limestone, 663; Limonite, 5894, 5895; Malachite, 6334, 6335.

Retro Capella Sub-artesian Bore. *See under* Artesian Bores. No. 378.

Return Cr. (br. of Herbert R.). Heads at Coolgarra, flows S.S.W. to Mt. Garnet, thence S.E. to Herbert R., 10 miles S.E. of Mt. Garnet Rail. Stn. *Min.Ref.* Azurite, *see* 213; Bismuth (native), 347; Bornite, 421; Calcite, 649; Cassiterite, 1060; Cerussite, 1224; Chalcanthite, 1330; Copper carbonate, 1913; Copper Pyrites, 2213; Cuprite, 2456; Felspar, 2639; Fluorspar, 2666, 2667; Gold, 3873; Hematite, 4732, 4733; Iron Pyrites, 5143; Kaolin, 5689; Limonite, 5874; Magnetite, 6005; Malachite, 6284, 6285; Mimetite, 6566; Minium, 6598; Mispickel, 6741; Silver, 7478, 7479; Talc, 7679; Tenorite, 7729; Tetrahedrite, 7770; Tile Ore, 2563; Zinc Blende, 8111.

—— —— (branch of), between Mt. Garnet and Coolgarra. *Min.Ref.* Copper Pyrites, *see* 2215A; Iron Pyrites, 5143A; Rhodochrosite, 7315.

Reward for Discovery of New Goldfields:—

For the discovery of a goldfield distant more than twenty miles from the nearest place where payable gold has previously been obtained, and on which there shall be employed, four months after the report of the discovery, not less than two hundred miners, a sum not exceeding £500 shall be awarded by the Crown. If five hundred miners are employed for not less than six months, the reward shall be not more than £1,000 (Reg. 165). In the Mining Act, however, provision is made for the sum of £10,000 to be paid to the actual discoverers of any new goldfield (Section 8), and in 1867 the Crown offered £3,000 for the discovery of a goldfield 20 miles distant from any existing field, which, it was necessary to prove, had supported 3,000 persons for six months after its discovery.

Note.—Rewards have been paid for gold discoveries, but the information concerning these payments is so fragmentary and unreliable that it is considered inadvisable to make a list of them. Possibly by searching old Departmental Records and Parliamentary Proceedings reliable data could be obtained.

Reward Mine (Dead Cat and Success Reefs), Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3815.

Rhodes (W.) Bore. *See under* Artesian Bores. No. 199.

Rhodium (Rh.) *Atom.Wt.* 102·9. *Sp.gr.* 12·1. Occurs alloyed with Platinum and Osmiridium.

Rhodochrome. *Var. of* Penninite, *which see.*

Rhodochrosite. *Syn.* Dialogite. *Compo.*, Carbonate of manganese. *Colour*, usually rose red. *Lustre*, vitreous. *H.* = 3·5-4·5. *Sp.gr.* = 3·5. *Contents* (*max.*), Manganese 47 per cent.

USES: *See* notes *under* Manganese.

7313. ——. *Assoc.with* Manganite. *Loc.* Broken Hill Mine, Cloncurry. *Co.* Beaconsfield; *Dist.* **Burke.**

7314. ——. *Assoc.with* Manganese-dioxide and Rhodonite. *Loc.* The Glen, Town Common, Warwick, 169 miles (by rail) S.W. of Brisbane. *Co.* Merivale; *Dist.* **Darling Downs.** *Ref.* L.C.B.

7315. ——. *Assoc.with* Copper Pyrites and Iron Pyrites, in lode. *Loc.* on branch of Return Cr., between Mt. Garnet and Coolgarra, 6 miles N.byE. of Mt. Garnet Rail. Stn., Chillagoe br. line, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* B.D.

7316. ——. *Assoc.with* Manganese-dioxide, Rhodonite, and Cobalt, in serpentine. *Loc.* Mt. Cobalt, 7 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 169, pp. 16-19 (1901).

7317. ——. *Assoc.with* Manganese-dioxide, Rhodonite, Cobalt, Oxide, Nickel, and Copper Oxide, in serpentine. *Loc.* Mt. Coora, 8 miles S.S.E. of Kilkivan Rail. Stn. (*ante*). *Assays: See* No. 1837. *Ref.* G.S.Q. Pubs. 28 (1886), 38 (1887), 169, pp. 16-18 (1901).

Rhodonite. *Syn.*, Manganese-Spar. *Compo.*, Silicate of manganese. *Colour*, rose red, black. *Lustre*, vitreous. *H.* = 5·5-6·5. *Sp.gr.* = 3·4-3·6.

7318. ——. *Assoc.with* Manganese-dioxide. *Loc.* Por. 5v, Mingo, 15 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Bowen; *Dist.* **Burnett.** *Ref.* L.C.B.

7319. ——. *Assoc.with* Manganese-dioxide and Rhodochrosite. *Loc.* The Glen, Town Common, Warwick, 169 miles (by rail) S.W. of Brisbane. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* L.C.B. and G.S.M.

7320. ——. *Loc.* Bajool, 47 miles (by rail) N.W. of Gladstone, 21 miles (by rail) S.E.byS. of Rockhampton. *Co.* Deas Thompson; *Dist.* **Port Curtis.** *Ref.* O.R.

7321. ——. *Assoc.with* Psilomelane. *Loc.* Pors. (856, 917, 1033), Walla, 5 miles S.S.W. of Gin Gin Rail. Stn. (Bundaberg and Mt. Perry line), 34 miles (by rail and road) W. of Bundaberg. *Co.* Bowen; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 189, p. 5 (1904).

7322. ——. *Assoc.with* Cobalt, Manganese-dioxide, and Rhodochrosite, in serpentine. *Loc.* Mt. Cobalt, 7 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 169, pp. 16-19 (1901).

7323. ——. *Assoc.with* Cobalt Oxide, Manganese-dioxide, Dialogite, Nickel, and Copper Oxide, in serpentine. *Loc.* Mt. Coora, 8 miles S.S.E. of Kilkivan Rail. Stn. (*ante*). *Assays: See* No. 1837. *Ref.* G.S.Q. Pubs. 48, p. 5 (1888), and 169, pp. 16-19 (1901).

7323A. ——. In quartzite. *Loc.* Nansen's Mine, W. of Por. 1386, Par. of Glastonbury, br. of Eel Cr., Mary R. *Co.* Lennox (*ante*). *Assay: See* Ref. *Ref.* A.R., p. 234 (1910).

Rhondda Colliery, Bundamba Coal Area, Ipswich. *Min.Ref.* Coal, *see* 1744.

Rich Co. Bore. *See under* Artesian Bores. No. 369.

Richardson's Bore. *See under* Artesian Bores. No. 156.

Richielieu Bore. *See under* Artesian Bores. No. 161.

Richmond, 307 miles (by rail) W.S.W. of Townsville. Railway Base for Woolgar Goldfield.

—— Bores. *See under* Artesian Bores. Nos. 123, 379, 380.

—— Co. Burke Dist. *See map*, Pl. 20.

—— Downs, 69 miles W.byN. of Hughenden Rail. Stn. *Min.Ref.* Gypsum, *see* 4619.

—— Reef, Croydon Goldfield. *See* Pl. 26. *Min.Ref.* Gold, *see* 3500; Iron Pyrites, 4959.

—— ——, Woodville, Hodgkinson Goldfield. *Min.Ref*, Gold, *see* 3764.

—— Tin Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 786; Tourmaline, 7844.

Ridgelands Goldfield. *See maps*, Pls. 2, 3.

Situation: Twenty miles N.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. Centre—about *Lat.* 23° 15′ S., *Long.* 150° 18′ E.

Discovery: Gold discovered here at end of 1866 by Messrs. Hosking and Bird. The field was opened in February, 1867, and gold to the value of £14,000 was obtained in a few months. *Ref.* A.R.D.M., 1887, p. 46, and "Early History of Rockhampton," by J. T. S. Bird, 1904.

Proclamation of Field: First gazetted, 4th November, 1871; last gazetted, 22nd February, 1888, as follows:—Commencing at a point bearing north 45 degrees west and distant about two hundred and twelve chains from the junction of Deep Creek with the Fitzroy River, and bounded thence on the east by a line bearing south four miles; on the south by a line bearing west four miles; on the west by a line bearing north four miles; and on the north by a line bearing east four miles to the point of commencement.

Area: 10,240 acres (16 sq. miles).

Mineral Statistics: Gold, *included in* Rockhampton, *in stat. tables*, Pls. 36, 46, 46a, 47.

Mineral References: Gold, 4340, 4341; Manganese (Psilomelane), 7102; Iron (Limonite) 5912a, (Iron Pyrites) 5407b.

Geological Note: The country about this region consists of micaceous talcose and chloritic schists, with slates, quartzites, sandstones, grits, conglomerates and limestones belonging to the Permo-Carboniferous System.

Geological Publications: Report—No. 31 (1886). *See under* Geol. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Rockhampton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Riethmüller Sub-artesian Bore. *See under* Artesian Bores. No. 241.

Rigo (Broad Arrow), Brit. New Guinea. *Min.Ref.* Manganese-dioxide, *see* 6496.

Rio Tinto Claim, Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3667c.

Rise and Shine Reef, Kilkivan Goldfield. *Min.Ref.* Galena, *see* 3077; Gold, 4406; Iron Pyrites, 5449; Zinc Blende, 8210a.

—— —— ——, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3839.

Rishton, 18 miles E.byS. of Charters Towers. *Min.Ref.* Stibnite, *see* 7641.

Rising Star Copper Mine, Cressbrook Cr., Par. of Biarra. *Min.Ref.* Copper Pyrites, *see* 2276; Galena, 3029; Iron Pyrites, 5335; Zinc Blende, 8175.

—— Sun Reef, Twelve-mile, Croydon Goldfield. *Min.Ref.* Gold, *see* 3556; Iron Pyrites, 4965.

River Paddock Sub-artesian Bore. *See under* Artesian Bores No. 561

—— Systems. *See* Pls. 1 to 35.

Riverbank Colliery, Burrum Coalfield. *Min.Ref.* Coal, *see* 1808a; Iron Pyrites, 4995; Opal (common), 6970; Siderite, 7404.

Riversleigh Bore. *See under* Artesian Bores. No. 146.

Riverston (Por. 406), S. of Gladstone. *Min.Ref.* Hematite, *see* 4786.

Road Cutting, Adelaide st., Brisbane. *Min.Ref.* Turquoise, *see* 7903.

Rob Roy Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

—— —— ——, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3679.

—— —— Silver Mine, Sellheim Mineral Field. *Min.Ref.* Cerussite, *see* 1292; Galena, 3017; Iron Pyrites, 5320; Ironstone, 5593; Minium, 6636; Silver, 7501; Zinc Blende, 8172.

Robert's Cr. Group of Copper-Mines, Cloncurry. *Includes* Boska, Elma, M.L.T., and Victory M. Leases. *Min.Ref.* Copper Ore, *see* 2015A.

Robertson River, head of Percy R. (br. of Gilbert R.), Etheridge Goldfield. *Min. Ref.* Agate, *see* 1372; Cassiterite, 971A; Gold (alluvial), 3243.

Robertson's Front Sel. M.F. (1828), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235C; Malachite, 6339E.

—— Reef, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 4163.

Robina (now Mt. Hawick) Copper Mine, 12 miles (by road) W.S.W. of Degilbo Rail. Stn. *Min.Ref.* Azurite, *see* 181; Calcite, 482; Copper Pyrites, 2140; Iron Pyrites, 5013; Malachite, 6204.

Robinson (Par. of) (Pors. 14V and 773), Mt. Sturt. *Min.Ref.* Turgite, *see* 7897.

Roche Cr., nr. Rochdale Stn. *Min.Ref.* Coal, *see* 1678.

Rochedale Co. Burke Dist. *See map,* Pl. 20.

—— Stn., 50 miles N.N.W. of Miles Rail. Stn. (Western line). *Min.Ref.* Coal, *see* 1678.

Rochford, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4034.

Rock Crystal. *Var. of* Quartz, *which see.* This colourless variety of quartz is of common occurrence, but it is seldom found in pieces large or clear enough for optical purposes.

Rock Salt. *See* Halite.

Rockhampton—

Situation: *See maps,* Pls. 2, 3. 393 miles (by rail) N.N.W. of Brisbane, 26 miles (by Fitzroy River or rail) from Broadmount. *Co.* Livingstone; *Dist.* Port Curtis. *Lat.*, 23° 22′ S.; *Long.*, 150° 30′ E.

Port for the Goldfields of Cawarral, Clermont, Ridgelands, Rosewood, Stanwell, Mt. Morgan (Crocodile Cr.), Ulam, Canoona, Morinish; the Dawson-Mackenzie Coalfields; Tolmie's Coalfield; Stanwell Coal Measures; Blair Athol (Clermont) Coalfield; the Peak Downs (Copperfield) Copper Mines at Clermont; the Great Fitzroy Copper Mine at Mt. Chalmers; Anakie Sapphire Fields; Jundah Opal Fields, etc., etc.

Harbourage: Broadmount Basin is 8 miles up from the entrance of the Fitroy River, and is connected by rail and river with Rockhampton. The wharf has a depth of 23 ft. at L.W.S. Port Alma on the opposite (south) side of the river is nearer Keppel Bay, and is also connected by rail with the town. The wharf here has a depth of 23 ft. at L.W.S., and a good anchorage off the wharf in 5 fathoms. One part of the river, from Broadmount to the town, has been dredged to 12 ft., L.W.S., the lower portion to 14 ft. At the town wharves average spring tides rise 9 ft., the deepwater wharf having a depth of 20 ft. at L.W.S.

Population: 15,456 (Census, 1911).

Rainfall: *See under* separate heading.

Leases (in mining centres). Mineral leases in force and applications, 32; area, 5,656 acres. Miners' homesteads and applications, 300; area, 2,499 acres. Gold-mining leases and applications, 3; area 45 acres (1912).

Principal Mining Centres: Mt. Morgan, Mt. Chalmers (Gt. Fitzroy).

Mineral Statistics (*include* Mt. Morgan Gold Returns, and Dawson-Mackenzie Coal Returns):

Gold,	*see tables and diagram,*		Pls. 36, 46, 46A, 47.
Silver,	,,	,,	Pls. 37, 46, 46A.
Copper,	,,	,,	Pls. 39, 46, 46A.
Coal,	,,	,,	Pls. 43, 46, 46A.

Gold Yields: Customs Returns between 1858 and 1907 ("Rockhampton Record"). Compare with official returns from Wardens, given in Statistical Tables.

Year.	Oz.	£
1858-9	45,000	180,000
1860	62	222
1861	20	75
1862	Missing.	
1863	2,619	10,073
1864	Missing.	
1865	15,566	57,763
1866	15,635	59,364
1867	37,570	148,120
1868	25,505	100,199
1869	31,109	121,834
1870	Missing.	
1871	23,801	89,323
1872	12,498	45,568
1873	10,563	38,762
1874	6,687	23,877
1875	4,248	16,010
1876	2,955	9,965
1877	5,341	18,980
1878	5,243	19,618
1879	6,696	25,314
1880	8,753	31,188
1881	7,364	27,402
1882	7,749	27,034
1883	8,592	31,500
Forward	283,576	1,082,191
1884	22,158	84,347
1885	19,569	73,616
1886	50,781	195,854
1887	92,495	348,091
1888	120,815	477,908
1889	340,859	1,381,269
1890	228,723	955,948
1891	143,524	597,693
1892	132,276	548,446
1893	114,622	476,030
1894	129,453	539,648
1895	146,296	608,992
1896	148,649	613,462
1897	182,583	748,335
1898	221,342	893,983
1899	203,262	814,440
1900	234,834	928,876
1901	176,666	691,885
1902	159,856	629,491
1903	139,751	550,938
1904	147,508	590,573
1905	147,626	590,439
1906	143,754	572,569
1907	150,315	571,622
Totals (oz.)	3,881,293	£15,566,046

Statistical Notes (Rockhampton and Mt. Morgan Fields): Greatest annual gold yield (1889), 314,356 fine oz. ; value, £1,335,299. Smallest annual gold yield recorded (1883), 3,209 fine oz.; value, £13,631, previous to which there are no official return. Total yield of gold to end of 1912. 4,023,364 fine oz.; value, £17,090,154. Most of this is the production of the Mt. Morgan mine, and is equal to 22·72 per cent. of the total gold production of Queensland since the commencement of mining. From 1887 to 1889 the gold yield rose from 82,338 oz. to 314,356 oz., but since 1890 there has been but little fluctuation in the production, seldom being less than 120,000 oz. or more than 170,000 oz. Coal output (Bluff Mines) has increased about 3,000 tons on each previous year's return since 1905, when the development of the mine took place. In copper the district (including Mt. Morgan) has produced 23·76 per cent. of the whole production of the State, as against 23·97 per cent. produced by the old Peak Downs Copper Mine. *See tables* on Pls. 36, 39, 43, 46, 46a, 47.

Crushing Mills: Batteries, 5 (30 Stamps). Charges, 15s. per ton.

Mineral Reference: Analcime, *see* 12.

Geological Note: The rocks comprise shale, greywacke, sandstone, quartzite, tuff, etc., belonging to the Gympie Formation (Permo-Carboniferous Systems). They form high ranges near the town, and are also the base of a large area of recent alluvium which has been deposited on the flats of the Fitzroy River. These alluvial deposits contain porous sand beds, and absorb a large quantity of water, and from which large supplies of fresh water have been pumped in times of drought.

Geological Publications (of fields, etc., near Rockhampton): Reports—Nos. 92 (1892), 131 (1898), 132 (1898), 190 (1904), 199 (1905), 205 (1906), 215 (1907.) *See under* name of locality or field mentioned below for other reports. See also History of Rockhampton Goldfields by G. L. Lukin. Ann. Rep. Dept. Mines, 1887.

Warden: Stationed at Rockhampton. *See under* Wardens for the names of the fields. Inspector of Mines: Stationed at Rockhampton. *See under* Inspector of Mines for the names of the fields supervised.

Chamber of Commerce: Secretary, A. F. Kent.

Technical College: For mining subjects taught *see under* "Technical Colleges."

General Information: *See Pugh's Almanac; Queensland Post Office Directory; Post and Telegraph Guide.* Newspapers, *Bulletin; Record.* Journal, *Queensland Government Mining Journal* (Brisbane).

Rockhampton Gold and Mineral Fields. *See* Cawarral, Canoona (Oaksview), Morinish, Mt. Morgan (Crocodile Cr.), Mt. Usher, Struck Oil, Dee R., Clanricarde, Mt. Victoria, Rosewood, Ridgelands, Stanwell, Ulam, Mt. Chalmers, Blackfellow's Gully, New Zealand Gully, Moonmera, Gavial Cr.

—— P. Co.'s Area, Mt. Morgan Goldfield. *Min.Ref.* Gold, *see* 4377; Iron Pyrites, 5432.

—— North Bore. *See under* Artesian Bores No. 45

Rocklands Group of Copper Mines, Cloncurry. *Includes* Double Oxide M.C., New Chum M.L., Butcher Bird M.C., First Try Extd. M.C., Cherry M.L., Rocklands M.L., and No. 1 East, Lady Ruby M.L., Yeronga P.A., and Fairfield M.L. *MinRef.* Chrysocolla, *see* 1491A; Cuprite, 2392A; Limonite, 5748A; Malachite, 6087A; Redruthite, 7208A; Tile Ore, 2493A.

—— Sub-artesian Bore. *See under* Artesian Bores. Nos. 342, 381.

Rocks (The), Fitzroy R., Rockhampton. *Min.Ref.* Analcime, *see* 12.

Rockwood Run Bores. *See under* Artesian Bores. No. 382.

Rocky, Sandy Cr., Etheridge Goldfield. *Min.Ref.* Anglesite, *see* 21E; Cerussite, 1190E; Copper Pyrites, 2151; Galena, 2757, 2758; Gold, 3740, 3741; Iron Pyrites, 5054, 5055; Massicot, 6525D; Ruby, 2359; Silver, 7450C; Zinc Blende, 8078.

—— Bores. *See under* Artesian Bores. Nos. 146, 292, 348, 379.

—— Creek, Boondooma, *viâ* Jimbour. *Min.Ref.* Cassiterite, *see* 772.

—— ——, 5 miles above Brovinia Cr., Brovinia Goldfield, S.S.W. of Gayndah. *Min.Ref.* Amethyst, *see* 7165A; Cairngorm, 7174; Cassiterite, 773A; Ilmenite, 4887; Rutile, 7325; Topaz, 7784A; Zircon, 8216A. *See also under* Govt. Ming. Jour., Report No. 34.

—— ——, Capeville, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3265.

—— ——. Flows into Reid's Cr., 7 miles W. of Mt. Perry. *Min.Ref.* Galena, *see* 2723; Gold, 3582; Hornblende, 4823; Iron Pyrites, 4983.

—— ——, Ten Mile Cr., Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 767.

—— —— Bore. *See under* Artesian Bores. No. 382.

—— Crossing, 4 miles N.W. of Ipswich. *Min.Ref.* Coal, *see* 1745.

Rocky River Goldfield—

Situation: *See maps*, Pls. 8, 9. The field is about 26 miles N.E. of Coen, 71 miles N.N.W. of Port Stewart, and 215 miles N.W. of Cooktown. *Co.* Sidmouth; *Dist.* Cook. Centre—about *Lat.* 13° 45′ S., *Long.* 143° 30′ E.

Proclamation of Field: First (and only one) gazetted, August 25th, 1897, as follows:—The whole of the area comprised within the northern, western, and southern watersheds of the Chester and Rocky Rivers.

Area: 114,560 acres = 179 sq. miles.

Mineral Statistics: Gold. *Included in* "Other Goldfields" *in stat. tables and diagram*, Pls. 36, 46, 46A, 47; Wolfram, *see under* Coen and Rocky *in stat. tables*, Pls. 42, 46, 46A.

Mineral References: Gold (alluvial) *see* 3238; Wolfram, 7977; Molybdenite, 6843; Iron (Ilmenite), 4895.

Geological Note: The country rock is granite, with quartzites and other sedimentary rocks some miles to the north-west.

Geological Publications: *Nil.*

Warden: Stationed at Cooktown. Inspector of Mines: Stationed at Croydon.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Rocky Tate R., br. of Tate R., at Fisherton. *Min.Ref.* Ruby, *see* 2359.

Rodd Peninsula, 25 miles E.S.E. of Gladstone. *Min.Ref.* Magnetite, *see* 6043.

Geological Note: The Peninsula is made up of granite, with gneiss and sandstone in places. Elvan and basic dykes intrude the granite and gneiss, while the sandstones (Burrum Formation) occupy small areas at the north-west end. Gympie slates (Permo-Carboniferous) form the Munro Range to the south-east, with large areas of alluvium on either side. *See* G.S.Q. Pub. No. 130 for details and map.

Rodger's Back Sel. M.F. (1430), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235N; Copper Pyrites, 2269G; Hematite, 4769G; Iron Pyrites, 5327H; Limonite, 5895C; Magnetite, 6029A; Malachite, 6339Q; Pyrrhotite, 7161A.

—— and Simpson's Bore (Stewart's Creek). *See* Simpson *under* Coal Bores.

Rodney Co. *See* Mitchell Dist. *See map*, Pl. 18.

—— Downs Run Bore. *See under* Artesian Bores. No 383.

Roger's Co. Darling Downs Dist. *See map*, Pl. 12.

—— Mine, Bompa Goldfield. *Min.Ref.* Copper Pyrites, *see* 2283; Gold, 4249; Iron Pyrites, 5361; Mispickel, 6786; Zinc Blende, 8182.

—— No. 1 Golden Gate, Croydon Goldfield. *Min.Ref.* Calcite, *see* 467, (*var.* Argentine) 565, (*var.* Nailhead Spar) 604; Halite, 4650; Iron Pyrites, 4949A; Vivianite, 7920.

—— Millchester Block, Charters Towers. *Min.Ref.* Galena, *see* 2910; Gold, 3933; Iron Pyrites, 5204.

Rolleston (Pors. 1847, 2110, 2188), Pittsworth. *Min.Ref.* Göthite, *see* 4565, 4566; Limonite, 5850-5852; Magnetite, 5999; Olivine, 6925; Turgite, 7894, 7895.

—— (Par. of) (Sub. 2, Por. 1862), Pittsworth. *Min.Ref.* Asbolane, *see* 119; Manganese-dioxide, 6415.

Roma. *See maps*, Pls. 12, 13. The town is 318 miles (by rail) W.byN. of Brisbane. *Lat.*, 26° 35′; *Long.*, 148° 40′. *Min.Ref.* Coal, *see* 1707A; Natural Gas, 6904; *see also under* Govt. Ming. Jour., Reports 53, 89A, 89B, 107, 149, and G.S.Q.P. 175, p. 4 (1902).

Geological Note: The rocks on the surface about Roma are Desert Sandstone Formation (Upper Cretaceous), Rolling Downs Formation (Lower Cretaceous), and Basalt, the Desert Sandstone and Basalt forming cappings to the Rolling Downs. Below the surface there exists a series of calcareous and arenaceous sandstones, more or less porous, both containing water and coal-bearing strata, and probably further down there are Dawson and Mackenzie Coal Measures. A bore for water revealed the presence of an inflammable gas the origin of which has not been determined.

Gas Analysis: Carbon dioxide 1.5 per cent.; carbon monoxide, 5.8 per cent.; Benzine series, 5 per cent.; Olefin series, 1.5 per cent.; Paraffin series (including 9.8 per cent. of ethane), 82.4 per cent.; nitrogen and residual gas, 3.4 per cent.; Oxygen, 0.0 per cent.; Hydrogen, 0.0 per cent. Gov. Analyst, 1901).

—— (40 miles W. of). *Min.Ref.* Coal, *see* 1699A.

—— Downs Artesian Bore. *See under* Artesian Bores. No. 384.

—— Artesian Bores. *See under* Artesian Bores. Nos. 46, 129. *Min.Ref.* Coal, *see* 1707A.

—— Gas Bores. *See under* Gas Bores.

—— Mineral Oil Co.'s Bore. *See under* Artesian Bores. No. 385.

Romeo Falls, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 815.

—— River, head br. of Annan R. Heads at Mt. Yates, Yorkey Range, and flows N.W. into the Annan R., 7½ miles S. of Rossville, 33 miles S. of Cooktown. *Min.Ref.* Cassiterite, *see* 815, 816.

Rookwood, E. of Balcomba Range. *Min.Ref.* Chiastolite, *see* 1416; Copper, 1853.

Rookwood Cr. (opposite junction of), 10 miles N.W. of Mungana Rail. Stn (Chillagoe line). *Min.Ref.* Limestone, *see* 641.

—— and Welcome Crs. (between), N.W. of Mungana (Chillagoe line). *Min.Ref.* Limestone, *see* 642.

Roper Co. Leichhardt Dist. *See map*, Pl. 10.

Ropewalk Reef, Goldsmith Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3738.

Rosalind Tin Lease, Koorboora. *Min.Ref.* Cassiterite, *see* 946.

Rose Cr., br. of Lynd R., 6 miles S.W. of Fisherton. *Min.Ref.* Bismutite, *see* 384; Molybdenite, 6827; Wolfram, 7937.

—— and Shamrock Mine, French's Cr., Towalla Goldfield. *Min.Ref.* Gold, *see* 3789; Iron Pyrites, 5083.

—— and Thistle Reef, Cloncurry. *Min.Ref.* Gold, *see* 3472; Limonite, 5788.

—— —— Silver Lode, Didcot Cr. *Min.Ref.* Ironstone, *see* 5510; Minium, 6579.

—— of Denmark Mine, Bamford. *Min.Ref.* Bismuth (native), *see* 336A; Bismuthinite, 368; Iron Pyrites, 5069.

—— of England Reef, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, Iron Pyrites, *see* 3969.

—— —— Tin Claim, Eureka Cr. *Min.Ref.* Cassiterite, *see* 853; Wolfram, 7944.

—— Hill Colliery (not working), Bundamba Coal Area. *Min.Ref.* Coal, *see* 1744A.

Rose Quartz. *See under* Quartz.

——, Shamrock, and Thistle Mine, Black Snake Goldfield. *Min.Ref.* Copper carbonate, *see* 1966; Copper Pyrites, 2319; Gold, 4392, 4392A; Hematite, 4803; Iron Pyrites, 5442; Magnetite, 6062; Mispickel, 6808.

Rosebery Co. Gregory South Dist. *See map,* Pl. 18.

—— Mine, nr. Chillagoe Rail. Stn. *Min.Ref.* Copper carbonate, *see* 1892; Copper (native), 1994; Copper Oxide, 2048.

Rosebrook, Mayne R., 47 miles W. of Longreach. *Min.Ref.* Kaolin, *see* 5685.

—— Co. Gregory North Dist. *See map,* Pl. 20.

—— Station, 115 miles W. of Longreach. *Min.Ref.* Gypsum, *see* 4623.

Rosebud Group of Copper Mines, Cloncurry. *Includes* Rosebud, Mona, and Nick-of-Time M. Leases. *Min.Ref.* Copper (ore), *see* 2016C; Iron Pyrites, 4917A.

—— Stn., 24 miles N.byW. of Jericho, Rail. Stn. (Central line). *Min.Ref.* Coal, *see* 1707B.

—— Sub-artesian Bore. *See under* Artesian Bores. Nos. 301, 318. *Min.Ref.* Coal, *see* 1709A.

Rosedale Mineral Field—

SITUATION: *See maps,* Pls. 2, 3. The field is about 34 miles (by rail) N.W. of Bundaberg. *Co.* Flinders; *Dist.* Port Curtis. Centre—about *Lat.* 24° 38′ S., *Long.* 151° 52′ E.

PROCLAMATION OF FIELD: First (and only one) gazetted, 16th July, 1906, as follows:—Commencing on the right bank of Murray Creek at the north-west corner of the Reserve for Mining Purposes, proclaimed *Government Gazette,* 1904, volume 2, page 1488, and bounded thence on the north by a line bearing east about forty-eight chains; thence by the east side of a three-chain road northerly about ten chains; thence by the south boundary of portion 134 easterly forty chains, and by the south boundary of portion 136 south-easterly about fifty-five chains, and easterly two hundred and sixty chains to the Watalgan Range, by that range south-westerly about four miles and twenty chains to an angle thirty chains south-westerly from the north-west corner of portion 74v, Monduran; on the south by a line bearing about 283 degrees 20 minutes two hundred chains to the south-east corner of portion 557 on Murphy Creek; thence by that creek downwards to the south boundary of portion 139, by that boundary east about eighty chains to the east boundaries of portions 139 and 138 north about eighty-five chains; thence by the north boundary of portion 138 west to Murray Creek; and thence by that creek downwards to the point of commencement.

AREA: 6,400 acres (10 sq. miles).

MINERAL STATISTICS: Wolfram, *see under* "Bundaberg," *in stat. tables,* Pls. 42, 46, 46A.

MINERAL REFERENCES: Bismuth (Native), 352; Bismutite, 411; Wolfram, 8040; Tungstite, 7880; Molybdenite, 6864; Manganese-dioxide, 6474; Limestone, 680, 681; Marble, 595, 596.

GEOLOGICAL NOTE: The prevailing rocks are granite, porphyry, and greisen, with limestone in the vicinity. Wolfram, molybdenite, and other minerals occur in quartz lodes in the greisen, close to the granite.

GEOLOGICAL PUBLICATIONS: *Nil.*

WARDEN: Stationed at Gladstone. INSPECTOR OF MINES: Stationed at Rockhampton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Rosella Cr. Heads at Mt. Leslie, 65 miles S.byW. of Bowen, flows northerly into Bowen R., 60 miles S.W. of Bowen. Length, about 30 miles. *Min.Ref.* Asphaltum, *see* 125; Calcite, 510; Natrolite, 6898A.

Rosemead Bore. *See under* Artesian Bores. No. 308.

Rosenthal (Par. of), (Pors. 95v, 96v, 43v). *Min.Ref.* Manganese-dioxide, *see* 6424.

Rosetta Mine, Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2822; Gold, 3816; Iron Pyrites, 5099.

Rosette M.L. (638), St. Paul's Group, Cloncurry. *Min.Ref.* Malachite, *see* 6187; Redruthite, 7271; Tile Ore, 2541.

Rosevale Bores. *See under* Artesian Bores. Nos. 211, 308.

Rosewood, 35 miles (by rail) W.S.W. of Brisbane. *Min.Ref.* Natural Gas, *see* 6905;

—— Bores. *See under* Artesian Bores. No. 386.

—— Coal Bores (no record). *See* Ipswich Coalfield *under* Coal Bores for note.

Rosewood Goldfield—

Situation : *See maps*, Pls. 2, 3. The field is about 32 miles W.byN. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. Centre about *Lat.* 27° 38′ S.; *Long.* 152° 38′ E.

Discovery : Gold discovered here in 1867. Several nuggets were found, a few being about 100 oz. in weight, while 10-oz. to 40-oz. pieces were not uncommon. *See* A.R.D.M. (1887), p. 47, and "Early History of Rockhampton" (1904).

Proclamation of Field : First (and only one) gazetted, 2nd Sep., 1898, as follows :—Commencing at a point bearing east 17 degrees south and distant one hundred and sixty chains from the confluence of Rosewood Creek with the Fitzroy River, and bounded thence on the west by a line bearing south six miles and twenty chains; on the south by portions 5v, 4v, and 3v bearing east four miles; on the east by a line bearing north six miles and twenty chains; on the north by a line bearing west four miles to the point of commencement;—exclusive of 640 acres included in Grazing Farm No. 310.

Area : 17,120 acres (26¾ sq. miles).

Mineral Statistics : Gold, *included in* "Rockhampton," *in stat. tables and diagram*, Pls. 36, 46, 46A, 47.

Mineral References : Gold (alluvial), *see* 3397A, (reef) 4350-4354; Copper (Chalcotrichite) 2491, (Oxidised ore) 2054, Copper Pyrites, 2301; Iron (Iron Pyrites) 5412. Other Minerals—Calcite, 545; Chlorite, 1467; Gismondite, 3170.

Geological Note : The country rock is quartzite, in which there are reefs associated with a dyke of altered diorite. The reefs are mostly made up of quartz and chlorite, but the gold often occurs in rich bunches of ore in calcite and chlorite. *See* G.S.Q. Pub. No. 92 for details.

Geological Publications : *Nil. See under* Supplementary Report List, No. 17.

Warden and Inspector of Mines : Both stationed at Rockhampton.

Reports : (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— Gully Bore. *See under* Artesian Bores. No. 334.

Rosewood Scrub. *See* G.S.Q.P. 77, p. 1 (1890).

Rosia (?), Spring Cr., trib. of Broadwater Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1021.

Ross Co. Warrego Dist. *See map*, Pl. 18.

—— (Cawarral) Cr., N.E.byE. of Rockhampton. *Min.Ref.* Turquoise, *see* 7909.

—— Well Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

Ross-shire, Twelve-mile, Croydon Goldfield. *Min.Ref.* Gold, *see* 3557.

Rossel Is., Brit. New Guinea. *Min.Ref.* Gold, *see* 4553-4555; Limonite, 5930.

Rosslyn Run, 14 miles W. of Mt. Perry Rail. Stn. *Min.Ref.* Graphite, *see* 4588; Hematite, 4703.

Rossville Tin Mines, Wallaby Cr., Annan R. Tinfield. *Include* Johnstone and Party's, Harris and Party's, Native Youth, Hatfield's, Kerr Bros., Yateman's, and Home Rule Tin Mines. *Min.Ref.* Cassiterite, *see* 782, 787, 788, 817-823; Chalcedony, 1340; Corundum, 2366; Felspar, 2631; Mica, 6553; Mispickel, 6672; Rock Crystal, 7184; Sapphire, 2340; Tourmaline, 7848-7850; Wolfram, 7934.

Rothwell Haigh Colliery (Stafford's), North Ipswich Coal Area. *Min.Ref.* Coal, *see* 1746.

—— Reef, 5 miles from Coen Goldfield. *Min.Ref.* Galena, *see* 2741B; Mispickel, 6678.

Roto Bore. *See under* Artesian Bores. No. 151.

Round Hill Manganese Workings. *Min.Ref.* Manganese-dioxide, *see* 6468.

—— Mt., W. of Coolgarra. *Min.Ref.* Azurite, *see* 210; Cuprite, 2457; Malachite, 6278; Wolfram, 8008.

—— —— Bore. *See under* Artesian Bores. No. 229.

Rover M.L. (678), Mighty Atom Group, Cloncurry. *Min.Ref.* Limonite, *see* 5817.

Roxburgh Mine, 6 miles N.E.byE. of Mt. Morgan Rail. Stn *Min.Ref.* Copper Pyrites, *see* 2316; Gold, 4378; Iron Pyrites, 5433; Zinc Blende, 8207.

Royal Arch Caves, 4 miles S.E. of Chillagoe Rail. Stn. *Min.Ref.* Limestone, *see* 637.

Royal Commissions on Mining, etc. (Queensland):—

Mining Laws. To inquire into and report upon the laws relating to mining for gold and for other minerals, etc., etc. F'cap. By Auth. (Brisbane), Gov. Printer, 1897. pp. lxxv., 300. C.A. Paper 54, 1897.

Torbanlea. To inquire and report upon the nature and cause of the accident at the Torbanlea Colliery on the 2nd March, 1900; and also concerning the occurrence of inflammable gas in the mines situated on the Burrum and Ipswich Coal Fields, etc., etc. F'cap. By Auth. (Brisbane), Gov. Printer, 1900. pp. xlii., 163. C.A. Paper 22, 1900.

North Chillagoe. To inquire into the facts and circumstances connected with the issue in August, 1900, of a prospectus of a company proposed to be registered in New South Wales under the name of the North Chillagoe Mines (no liability) [Tartana], and especially as to the falsification of a report by Mr. B. Dunstan, Assistant Gov. Geologist of Queensland, as contained in that prospectus, etc., etc. F'cap. By Auth. (Brisbane), Gov. Printer, 1900. pp. xi., 24. C.A. Paper 122, 1900.

Iron Bonus To report on the Bonuses for Manufacturers Bill, etc. F'cap. (Brisbane). By Auth. Gov. Printer, 1904. pp. xix., 194. No. 2—F.10501.

Health of Miners. To inquire into the conditions of work in Queensland mines in relation to the health of miners, etc., etc. F'cap. By Auth. (Brisbane), Gov. Printer, 1911. pp. cxi., 381. C.A. Paper 12, 1911.

—— David Reef, Glastonbury Goldfield. *Min.Ref.* Gold, *see* 4398.

—— Prince M.C. (54), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235B; Malachite, 6339A.

—— Standard Mine, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3836; Iron Pyrites, 5112.

—— —— Silver Mine, Star R. (Argentine) Silver Field. *Min.Ref.* Cerussite, *see* 1279; Malachite, 6314; Minium, 6625.

—— —— Tin Mine, Emu Cr. *Min.Ref.* Cassiterite, *see* 935.

—— —— —— ——, Irvinebank. *Min.Ref.* Cassiterite, *see* 870.

Roy's Camp Sub-artesian Bore. *See under* Artesian Bores. No. 311.

Rubellite. *Var. of* Tourmaline. *which see.*

Ruby. *Var. of* Corundum, *which see.*

MINERAL NOTE: Oriental rubies are common in the alluvial gold leads of Jordan Cr. and other goldfields, and occasionally are met with in the sapphire drifts at Anakie, and the tin drifts of Stanthorpe. Those found at Jordan Cr. are inclined to be purple, the colour not being attractive, but specimens found with the sapphire at Anakie, although small, are of fine lustre and of a pinkish tint. Some of the blue sapphires at Anakie contain bright ruby bands, the colour lying along the prism or pyramid faces of the crystals. *See* G.S.Q. Pub. No. 172 for Anakie notes.

DISCOVERY: Rubies were found at Anakie about the year 1878.

Ruby Cr., Anakie. Rises in the Anakie Range, and flows for about 10 miles N.E. into Retreat Cr. 8 miles N.N.W. of Anakie Rail. Stn. (Central line). *Min.Ref.* Azurite, *see* 234A, 238; Ironstone, 5598, 5600; Malachite, 6341; Pyromorphite, 7149; Tetrahedrite, 7776.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 381.

—— G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2911; Gold, 3934; Iron Pyrites, 5205.

—— Reef, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, Iron Pyrites, *see* 3970.

Ruby Silver Ore. *Syn.* Pronstite, *which see.*

Ruby Tin. *Var. of* Cassiterite, *which see.*

—— —— Dredging Claim, Rocky Cr., S.S.W. of Gayndah. *Min.Ref.* Amethyst, *see* 7165A; Cassiterite, 773A; Ilmenite, 4887; Rutile, 7325; Topaz, 7784A; Zircon, 8216A.

—— United G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2912; Gold, 3935; Iron Pyrites, 5206.

—— and Retreat Crs. (between), 9 miles (by road) N.W. of Anakie. *Min.Ref.* Bornite, *see* 431; Chalcanthite, 1335; Copperas, 2337; Copper Pyrites, 2268A; Ironstone, 5597; Limestone, 663; Limonite, 5894, 5895; Malachite, 6334, 6335.

Rubyvale, Anakie. *See* Pl. 31. *Min.Ref.* Ilmenite, *see* 4902A. *See also under* Policeman Cr.

Ruddygore Copper Mine, Arbinjoe Cr., 2 miles N.E. of Chillagoe Rail. Stn. *Min. Ref.* Atacamite, *see* 129; Bornite, 418; Copper Pyrites, 2169; Cuprite, 2431; Hematite, 4713; Iron Pyrites, 5074; Malachite, 6230; Tenorite, 7723; Tetrahedrite, 7763; Tile Ore, 2550.

Rundle's Bore. *See under* Artesian Bores. No. 255.

Running Cr., Gigoomgan Run. *Min.Ref.* Barytes, *see* 286.

—— ——, Kilkivan. Heads at Main Coast Range 30 miles W.N.W. of Gympie, and flows N.E. into Munna Cr., trib. of Mary R. Length, about 10 miles. *Min.Ref.* Calcite, *see* 555; Gold, 4408.

—— ——. Flows into the Star R. 50 miles N.W. of Ravenswood Junction (Gt. Northern line). *Min.Ref.* Cassiterite, *see* 1166; Garnet, 3131; Topaz, 7805.

—— ——, Yorkey's Goldfield. *Min.Ref.* Garnet, *see* 3148, 3149.

—— —— Tin Field. *See* Kangaroo Hills Mineral Field.

—— River. Rises in Sea View Range 20 miles S. of Ingham, flows S.W. into Burdekin R. 5 miles S.W. of Ewan (Kangaroo Hills). Length, about 35 miles. *Min.Ref.* Azurite, *see* 220; Cassiterite, 1163; Cerussite, 1253-1258; Chrysocolla, 1528; Fluorspar, 2584A; Galena, 2958-2976; Malachite, 6299, 6300; Manganese-dioxide, 6438, 6439; Mispickel, 6752, 6755; Tile Ore, 2565; Wolfram, 8032A.

—— —— N. Lease (164), Kangaroo Hills Mineral Field. *Min.Ref.* Calcite, *see* 506; Chlorite, 1460; Copper carbonate, 1936; Garnet, 3130.

—— —— S. Lease (163), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1256; Copper carbonate, 1937; Ironstone, 5565.

Runnymede Bore. *See under* Artesian Bores. No. 196.

Rupert Co. Burke Dist. *See map*, Pl. 20.

Russell (Murray), Inspector of Mines.

Report on Crocodile Goldfield. Q.G.M.J., vol. 3, p. 365 (1902).

Report on Mt. Molloy Copper Mines. Q.G.M.J., vol. 4, p. 487 (1903).

On Russell Goldfield. Q.G.M.J., vol. 5, p. 347 (1904).

On Jordan Cr. Goldfield. Q.G.M.J., vol. 5, p. 580 (1904).

Mt. Emu Mining Field. Q.G.M.J., vol. 13, p. 258 (1912).

Walsh and Tinaroo Mineral Field and Hodgkinson Goldfield. In A.R.D.M., pp. 111-115 (1904).

Russell Goldfield—

Situation: *See maps*, Pls. 8, 9, 22. Fifteen to twenty miles W.N.W. of Geraldton. *Co.* Nares; *Dist.* Cook. Centre about *Lat.* 17° 25′ S.; *Long.* 145° 30′ E.

Discovery: In 1887.

Proclamation of Field: First gazetted, 22nd September, 1887; now included in Russell Extended Goldfield by proclamation of 29th September, 1905, *which see.*

Russell Extd. Goldfield—

Situation, Etc. : *See* Russell Goldfield.

Population : under 20.

Proclamation of Field : First gazetted, 15th August, 1889 ; last alteration, 29th September, 1905, as follows :—Commencing on the apex of Mount Bartle Frere, and bounded thence on the east by a line bearing south about eleven miles and a-quarter to the north branch of the Johnstone River ; by that river upwards to its head in the Coast Range ; and by that range south-easterly to the point of commencement.

Leases : Miners' Homesteads in force (1910), 3 ; area, 15 acres. None in 1912, but some might be included in Herberton returns.

Area : 92,160 acres (644 sq. miles).

Principal Mining Centre : Towalla.

Mineral Statistics : Gold. *Included in* "Other Goldfields," *in stat. tables*, Pls. 36, 46, 46a, 47.

Gold, Average Values : *See under* Gold.

Mineral References : Gold (alluvial), 3222-3233, (reef) 3779-3791 ; Lead (Galena), 2810 ; Platinum, 7072 ; Tin (Cassiterite), 963-4 ; Iron (Hematite) 4722, (Iron Pyrites) 5082-5, (Ironstone) 5532-3, (Mispickel) 6706, (Limonite) 5847 ; Coal (Lignite), 1617a ; Olivine, 6934 ; Opal (wood), 7003 ; Sapphire, 2344.

Geological Note : Granite, schist, slate, quartzite, greywacke, etc., of indefinite age, together with basalt and alluvial gold deposits of Tertiary Age. The alluvial deposits, in places, are covered with flows of basalt, the granite, slate, etc., being traversed by gold-bearing quartz reefs.

Geological Publications : Reports—Nos. 45 (1888), 48 (1888), 89 (1893), 97 (1894). *See under* Geol. Surv. List for title. *See also under* Gov. Ming. Jour., Report No. 40.

Warden and Inspector of Mines : Both stationed at Herberton.

Reports : (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour. ; annually in A.R.D.M.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4528.

Ruth M.L. (335), Mt. Remarkable Group, Cloncurry. *Min.Ref.* Limonite, *see* 5745 ; Malachite, 6076 ; Redruthite, 7205.

Ruthenium (Ru). *Atom. Wt.* = 101·7. *Sp.gr.* = 12·26. Occurs alloyed with Osmiridium.

Rutherford's Bores. *See under* Artesian Bores. Nos. 357, 415.

Ruthven Bores. *See under* Artesian Bores. Nos. 324, 387.

—— Co. Mitchell Dist. *See map*, Pl. 18.

Rutile. *Compo.*, Titanium dioxide. *Colour*, reddish brown, black. *Streak*, brownish. *H.* = 6-6·5. *Sp.gr.* = 4·18-4·25. *Var.* Sagenite. *Contents* (*max.*), Titanic acid 90 to 100 per cent. (=Titanium 54 to 60 per cent.).

Geological Note : Common in drift deposits of gold and tin in association with Amethyst, Cairngorm, Chalcedony, Diamond, Garnet, Ilmenite, Jasper, Rock Crystal, Sapphire, Spinel, Topaz, Tourmaline, Zircon, etc., etc. It occurs with wolfram and tin in the Chillagoe and Herberton Mineral Fields, and is found as inclusions in basalt associated with Sapphires, Tourmaline, Ilmenite, etc., near Anakie. It forms needle-like inclusions in Rock Crystal and Cairngorm at Stanthorpe, and is known as Sagenite or "Grasstone." Many tons of rutile could be gathered at the tin mines on the Herberton Fields, but at present very little demand exists for it. *See* note *under* Titanium.

Uses : Rutile is used for the production of ferro-titanium, an alloy applied to the manufacture of titanium steel. It is also used for colouring pottery, leather, and fabric, and as electrodes in "magnetite" are lamps.

7323b.——. In watercourses falling into Jumna Cr., in Por. 5v, Par. of Manuem, about 19 miles W.byS. of Kingaroy Rail. Stn. (Nanango Br. line). *Co.* Boondooma ; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 114, p. 2 (1896).

7324. ——. Taabinga Village, Kingaroy Rail. Stn., 120 miles (by rail) S.W. of Maryborough. *Co.* Fitzroy ; *Dist.* Burnett. *Ref.* O.R.

7325. Rutile. *Assoc.with* Cassiterite, Ilmenite, Topaz, Zircon, and Amethyst, in alluvial deposits. *Loc.* P.C. Workings, Rocky Cr., 5 miles above Brovinia Cr., br. of Cadarga Cr., 35½ miles S.S.W. of Gayndah, 60 miles (by road) *viâ* Cooranga Head Stn. *Co.* Newcastle; *Dist.* Burnett. *Ref.* Q.G.M.J., vol. 5, p. 62 (1904).

7326. ——. Maytown, Palmer Goldfield, 36 miles S. of Laura Rail. Stn. (Cooktown line), 103 miles (by rail and road) S.W.byW. of Cooktown. *Co.* Chelmsford; *Dist.* **Cook.** *Ref.* L.C.B.

7327. ——. *Assoc.with* Ilmenite, in greisen lode. *Loc.* Emu Cr., br. of Walsh R., ½-mile W. of Emuford, 11 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay:* Titanic acid = 20·0 per cent. *Ref.* G.S.M., and A.R., p. 134 (1908).

7328. ——. Tate R. Tin Mines, Fisherton, 24 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 59 (1900).

7329. ——. Henrietta Cr., Jordan Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook.

7330. ——. *Assoc.with* Penninite. *Loc.* Venus P.C., Mt. Surprise, 67 miles S.W. of Almaden Rail. Stn. *Co.* Tate; *Dist.* Cook. *Ref.* O.R.

7331. ——. *Assoc.with* Ilmenite. *Loc.* Springfield, nr. Fossilbrook. *Co.* Tate; *Dist.* Cook. *Ref.* B.D.

7331A. ——. Brooklands Station, nr. Fossilbrook. *Co.* Tate (*ante*).

7332. ——. Coolgarra Tin Mines, 12 miles (by coach) N.E.byN. of Mt. Garnet (Mt. Garnet br. line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 59 (1900).

7333. ——. Irregularly in chlorite. *Loc.* Ewan, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* B.D.

7334. ——. *Assoc.with* Ilmenite and Chlorite, in lode. *Loc.* Air Motor Claim, Little Oakey Cr., Kangaroo Hills Mineral Field. *Assay:* Titanium oxide = 31·1 per cent. *Ref.* G.S.M., and A.R., p. 134 (1908).

7335. ——. *Assoc.with* Gold, Sapphire, Spinel, Garnet, Zircon, Amethyst, Cairngorm, Chalcedony, Jasper, Topaz, Diamond, Magnetite, Ilmenite, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Stn., Policeman, Tomahawk, and Central Crs., Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton. *Cos.* Clermont and Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), and 172, p. 20 (1907).

7336. ——. Taromeo, Esk to Nanango Road, 20 miles N.N.W. of Kannangur Rail. Stn., 103 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.**

7337. —— **Sagenite** (*var.*). Rutile needles in quartz. *Loc.* Broadwater Creek, 2½ miles W. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* B.D.

Rutledge Co. Kennedy South Dist. *See map*, Pl. 14.

Ryan's (Allandale) Bore. *See under* Artesian Bores. No. 259.

—— Creek, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211; Hypersthene, 4878.

—— 12 South Mine, Golden Gate, Croydon Goldfield. *Min.Ref.* Gold, *see* 3505.

Ryan's Sel. and at base of McCross, 8 miles N. of Helidon Rail. Stn. *Min.Ref.* Calcite, *see* 664B.

Sagenite. *Var. of* Rutile, *which see.* At Stanthorpe this occurs as fine hair-like inclusions in clear quartz, and is much prized as a gemstone.

Sahl. Par. of (Por. 29). *Min.Ref.* Chromite, *see* 1476.

Sailor Boy Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4288; Iron Pyrites, 5386; Mispickel, 6797.

Sailor's Gully, Gympie Goldfield. *Min.Ref.* Gold (alluvial), *see* 3416 (nugget) 3450.

Sal-ammoniac. *Compo.*, Ammonium chloride. *Colour*, white. *Taste*, pungent. *H.* = 1·5-2. *Sp.gr.* = 1·52. *Contents* (*max.*), Chlorine 66 per cent., Ammonium 33 per cent.

7338. ——. The "Burning Mt.", Hillalong, 22 miles S.W. of Finch Hatton Rail. Stn., Mackay line, 50 miles (by rail and road) W.byS. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* L.C.B.

Salisbury Co. Kennedy North Dist. *See map*, Pl. 16.

Salisbury Plains, 20 miles W. of Bowen. *Min.Ref.* Molybdenite, *see* 6858C.

Salt. *Syn.* Halite, *which see.*

—— (common). *See note under* Sodium.

Salt in Artesian Bore Waters. *See* notes under Artesian Bores—Nos. 24(I), 27(I), 305, 333(IC), 385.

Salt Lakes of Queensland—

Galilee, 50 miles N.E. of Aramac.
Buchanan, 100 miles N.N.E. of Aramac.
Lake, W. of Lake Philippi, near western border. *Lat.*, 24° 15′.
Lake near Lake Muncoonie, nr. western border. *Lat.*, 25° 10′.
Müeller (Soda), 16 miles N.E. of Aramac.

Salt Manufacture. At various times saltworks have been established in the State, but they only produced salt in small quantities, and were only in operation for a short time. These works were at Burketown, Mackay, Casuarina Island near Rockhampton, Port Curtis near Gladstone, and Redland Bay near Brisbane, all of which, except those at Casuarina, ceased operations many years ago. The Casuarina works were built about five years ago to treat brine from a local well, but they closed down after being in operation for about a year. The max. solid contents of this brine is made up of 60 per cent. of chlorine and 39 per cent. of sodium.

The necessary conditions for the manufacture of salt include an area of several square miles of flat coastal land, covered only by high tides, and having a surface of clay impervious to water. Such places are to be found around Moreton Bay, Kepple Bay, and Port Curtis. The Port Alma salt pans, near the mouth of the Fitzroy River, are made up of a tenaceous clay, and the locality appears to be a very suitable site for saltworks. Other places near Brisbane, Gladstone, Broadsound, Mackay, and further north also offer facilities for the establishment of the industry.

In comparison with other parts of Eastern Australia, in addition to the large areas of low coastal country which she possesses, Queensland should also be very suitable because of its climatic conditions. The Commonwealth Meteorologist has estimated that the annual evaporation of sea water at Melbourne is 38 inches, at Brisbane 51 inches, at Rockhampton 58 inches, and at Cooktown 75 inches, so that the annual precipitation of salt in Queensland would be much greater than at places on the southern end of the continent. On the other hand, the rainfall must be a very great factor in fixing the sites for establishing works. The average rainfall at Brisbane is 47 inches, at Rockhampton 41 inches, and at Cooktown 67 inches. (See other statistics under Rainfall.)

In Western Queensland there are several shallow salt lakes, some of which become dry every year. The salt deposits in these lakes are said to be very extensive, but have always been considered to be of no commercial value, on account of their distance from the coast and the cost of transit to markets. In times of drought, when transit has been difficult, the salt of these lakes, which is as white as snow, has been utilised by the people of Western Queensland.

Salt water is sometimes met with in large quantities in artesian bores, but no use is made of it, as the bores are sunk for the purpose of tapping supplies of fresh water, and any salt water met with is cased off.

A description of some salt deposits is given by Dr. J. V. Danes, in the Proceedings of the Geographical Society (Q'land Br.), vol. xxv., p. 83, under the title of "Report on a Tour along the Dividing Range, from Aramac to Pentland."

For salt in artesian bores, *see under* Artesian Bores and Notes. Nos. 24 (1), 27 (1), 305, 325 (9), 333 (1c), 385, 451. *See also* notes under Sodium.

Saltbush Bores. *See under* Artesian Bores. Nos. 190, 413.

Saltpetre. Deposits of this mineral are unknown in the State.

Saltern Creek Bores. *See under* Artesian Bores. Nos. 204, 388.

Saltwater (Burrum Bores). *See under* Coal Bores.

Saltwater Cr., 20 miles W. of Bowen. *Min.Ref.* Molybdenite, *see* 6858c.

Samford, 8 miles W.N.W. of Enoggera Rail. Stn. *Lat.*, 27° 24′; *Long.*, 152° 51′. *Min.Ref.* Gold, *see* 4219A; Iron Pyrites, 5346; Silver, 7509.

Samsonvale, 18 miles (by road) N.W.byW. of Enoggera Rail. Stn. *Lat.*, 27° 17′; *Long.*, 152° 52′. *Min.Ref.* Ilmenite, *see* 4909; Iron Pyrites, 5347.

Sanderson's Bore, Stony Cr., Stanwell. *Min.Ref.* Mineral Water, *see* 6573. *See also under* Coal Bores.

Sandgate, 13 miles (by rail) N.byE. of Brisbane. *Lat.*, 27° 20′ S.; *Long.*, 153° 8′ E. *Min.Ref.* Chalcedony, *see* 1358. *See under* Supplementary Report List, No. 62, for further reference.

GEOLOGICAL NOTE: The rocks comprise sandstones and shales belonging to the Burrum Series (Trias-Jura). Coal seams are reported to occur here, and many years ago shafts were sunk to prospect for coal, and a few tons of good coal were obtained.

Sandringham Co. Gregory North Dist. *See map*, Pl. 20.

—— Run Bores. *See under* Artesian Bores. No. 389.

Sandy Cr., trib. of Barambah Cr., Ban Ban. *Min.Ref.* Gold, *see* 3627; Malachite, 6203, 6203A; Serpentine, 7379.

—— ——, Capeville, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3265.

—— ——, Etheridge Goldfield. *Min.Ref.* Copper Pyrites, *see* 2151; Galena, 2757, 2758; Gold, 3740, 3741; Iron Pyrites, 5054, 5055; Zinc Blende, 8078, 8079.

—— ——, Kangaroo Hills Mineral Field. *Min.Ref.* Cassiterite, *see* 1161; Magnetite, 6021; Topaz, 7804.

—— ——, 12 miles S. of Mackay. *Min.Ref.* Mica, *see* 6563.

—— ——, Mt. Perry. *Min.Ref.* Calcite, *see* 473.

—— ——, Ravenswood Goldfield. Reefs:—Australian Felix, Cousin Jack, Esperanza, Fanny Fern, John Bull, No Name, Perseverance, Politician, Prussian, Rise and Shine, Yellow Jacket, etc. *Min.Ref.* Copper Pyrites, *see* 2232, 2233; Galena, 2938-2943; Gold, 4035-4039; Iron Pyrites, 5250-5254; Mispickel, 6746; Silver, 7487; Steatite, 7691; Zinc Blende, 8148-8150.

—— ——, W. of Star R. *Min.Ref.* Azurite, *see* 225, 226; Cuprite, 2465, 2466; Malachite, 6317; Tenorite, 7733; Tile Ore, 2566.

—— ——. Heads at Herries Range, 22 miles S.W. of Warwick, and flows N.E. into Condamine R., 8 miles W.N.W. of Warwick. *Min.Ref.* Gold, *see* 3875; Prase, 1400.

—— —— Bore. *See under* Artesian Bores. No. 348.

Sandy Cr. Leads, Clermont Goldfield. *Include* Golden Hill, Baker's Hill, Norwegian Gully, Goat, and Poverty Point. *Min.Ref.* Gold (alluvial), *see* 3325; Fireclay, 2650A; Kaolin, 5692.

—— —— Road, 7 miles W. of Warwick. *Min.Ref.* Manganese-dioxide, *see* 6422.

Sandy Cr. Tin Mines, 80 miles (by road) N.W. of Charters Towers. *Include* Lucky Hit, McMahon, Mystery, Ruby, and Standard Lodes. *Min.Ref.* Cassiterite, *see* 1151A. *See also* Q.G.M.J., vol. 12, p. 122 (1911).

—— Mt., Crow's Nest. *Min.Ref.* Galena, *see* 3030; Iron Pyrites, 5331.

Sanidine. *Var. of* Orthoclase, *which see.*

Sankey (J. R.).

On Queensland Gems. Q.G.M.J., vol. 8, p. 11 (1907).

Sannox Bore. *See under* Artesian Bores. No. 255.

Santo Creek, br. of Woolein Cr., 8 miles south of Rannes Station on Mt. Morgan-Dawson Railway line, S.W.byS. of Rockhampton. *Min.Ref.* Copper, *see* 1851.

Saponite. *Compo.*, Hyd. silicate of magnesia and alumina. *Colour*, white, yellowish, greenish, bluish, and reddish. *Lustre*, greasy. Soft, but brittle on drying. *Sp.gr.* = 2·24-2·30.

7338A.—— (?). *Assoc.with* Phacolite and Calcite, in vesicular basalt. *Loc.* between Harlaxton and Spring Bluff Rail. Stations, near Toowoomba. *Co.* Aubigny; *Dist.* Moreton. *Analysis:* Moisture = 12·3, loss on ignition = 10·1, Silica (S_1O_2) = 40·0, Alumina (with trace of Iron) Al_2O_3 and F_2O_3 = 24·7, Lime (CaO) = 2·9, Magnesia = 10·3—100·3 per cent. *Ref.* A.R., p. 210 (1910).

Sapphire. *Var. of* Corundum, *which see.*

—— (white). A term often used by miners and jewellers for colourless topaz, *which see.* Artificial (synthetical) white sapphire is now being put on to the market, and has a brighter lustre than the natural topaz.

—— Discoveries. *See* Discoveries *under* Corundum.

Sapphire Fields of Queensland. Anakie (Withersfield) Fields, Retreat Cr., Policeman Cr., Tomahawk Cr., *which see. See also maps,* Pls. 10, 11, 31, G.S.Q. Pub. No. 172, and Govt. Ming. Jour., Report No. 55. *See also under* Corundum.

—— Bibliography. *See* under Corundum.

—— Statistics. *See tables and diagrams,* Pls. 44, 45, 46-46A, 56.

Sapphiretown, Anakie. *See* Pl. 31. General references to minerals are made under Retreat Creek.

Saracinesca Reef, Cloncurry. *Min.Ref.* Chalcedony, *see* 1337; Gold, 3473; Ironstone, 5491.

Sarah Howson Reef, Pentland, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4056; Iron Pyrites, 5266.

Saratoga Mine, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4027; Iron Pyrites, 5243.

Sard. *See* Chalcedony, *var.* Carnelian.

Sardine Creek Bore. *See under* Artesian Bores. No. 178.

Sardonyx. *See* Chalcedony, *var.* Agate.

Sarnia Gem Reef, Carron, Croydon Goldfield. *Min.Ref.* Galena, *see* 2697B; Gold, 3481; Iron Pyrites, 4935.

Satin Spar. *Var. of* Gypsum, *which see.*

Savage's Sub-artesian Bores. *See under* Artesian Bores. Nos. 272, 377.

Savannah Co. Burke Dist. *See map,* Pl. 20.

—— Downs Bores. *See under* Artesian Bores. No. 390.

—— Reef, Yarraden, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3712.

Saw Gully, 21 miles W.N.W. of Warwick. *Min.Ref.* Gold, *see* 3854; Iron Pyrites, 5124.

Sawmill Sub-artesian Bore. *See under* Artesian Bores. No. 621.

Sawpit Bores. *See under* Artesian Bores. Nos. 229, 410.

—— Creek, 1 mile N. of Stanwell Rail. Stn (Central line). *Min.Ref.* Magnesite, *see* 5960.

—— Gully, Talgai Goldfield. *Min.Ref.* Gold (alluvial), *see* 3253.

Saxby Co. Burke Dist. *See map,* Pl. 20.

—— Downs Bores. *See under* Artesian Bores. Nos. 196, 391, 392.

—— River Bores. *See under* Artesian Bores. No. 391.

Saxon Shaft, Gt. Pyramid Mine, Cressbrook Cr. *Min.Ref.* Copper Pyrites, *see* 2274; Galena, 3028; Iron Pyrites, 5333; Tenorite, 7738; Zinc Blende, 8174.

Scale of Hardness—

1	Talc.
1¾	Lead (metallic). Gypsum.
2	Rock salt. Sulphur. Stibnite.
2½	Mica. Galena. Bismuth (met.).
3	Calcite. Gold (pure). Silver (pure).
3½	Zinc Blende. Zinc (metallic).
4	Fluorspar. Copper coin.
4½	Scheelite.
5	Apatite. Wolfram.
5½	Chromite. Window Glass.
6	Opal. Felspar. Iron Pyrites.
6½	File. Cassiterite (tinstone).
7	Quartz. Garnet. Steel file.
7½	Zircon. Beryl. Tourmaline.
8	Topaz. Spinel.
8½	Some Anakie Sapphires.
9	Sapphire (usual hardness).
9½	Some Anakie Sapphires.
10	Diamond.

Scanlan's Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Scapolite. *Syn.* Wernerite. *Compo.,* Silicate of alumina and lime. *Colour,* white. *Lustre,* vitreous, inclining to resinous. *H.* = 5-6. *Sp.gr.* = 2·66-2·73.

7338B.——. Coated with Siderite. *Loc.* Conran's Reef, Norton Goldfield, 33 miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.M.

Scarborough, about 25 miles (by rail and road) N.N.E. of Brisbane. *Min.Ref.* Chalcedony, *see* 1359.

Schardon's (Camp) Mine, 4 miles N. of Almaden Rail. Stn. (Chillagoe line). *Min.Ref.* Native Bismuth, *see* 336; Bismutite, 389; Molybdenite, 6840; Wolfram, 7957.

Scheelite. *Compo.*, Tungstate of lime. *Colour*, whitish, yellowish, brownish. *Lustre*, vitreous. *Streak*, white. *H.* = 4·5-5. *Sp.gr.* = 5·9-6·1. *Contents* (*max.*), Tungstic acid 80 per cent. (=Tungsten 64 per cent.).

Mineral Note: Found occasionally in association with mispickel, monazite, and wolfram, and with bismuth, copper, gold, and tin ores. The gangues are commonly quartz, chlorite, and muscovite, the country rocks being either greisen, granite, slate, or diorite. The deposits at Parada, on the Chillagoe Railway line, have yielded most of the scheelite produced in Queensland, the mineral occurring there as small veins in association with copper ores. *See* note under Tungsten.

Statistics: *See* tables, Pls. 42, 45, 46, and diagrams, Pls. 54, 57.

7338c.——. Croydon. *Co.* Burke; *Dist.* Cook.

7339. ——. *Assoc.with* Wolfram, Cassiterite, Molybdenite, Bismuth (native), and Bismutite, with traces of Copper Pyrites, in quartz, chlorite, and muscovite. *Loc.* Pinnacle Cr., br. of Lynd R., 16 miles W. of Fossilbrook, 50 miles S.W. of Almaden Rail. Stn., Chillagoe line, Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* Cook. *Ref.* B.D.

7340.——. *Loc.* Limestone Range, 8 miles S.E. of Palmerville, Palmer Goldfield. *Co.* Chelmford; *Dist.* Cook. *Ref.* G.S.M.

7341. ——. *Assoc.with* Wolfram, Molybdenite, Tungstite, Cassiterite, with traces of Tenorite, Malachite, Chrysocolla, Iron Pyrites, etc., in defined quartz lodes in slates, etc. *Loc.* Mt. Carbine, 11 miles W. of Port Douglas, 34 miles (*viâ* Mt. Molloy) N.N.W. of Biboohra Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Dagmar; *Dist.* Cook. *Ref.* B.D.

7342. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Western Cr., 18 miles S.W. of Georgetown. Etheridge Goldfield. *Co.* Gilbert; *Dist.* Cook. *Ref.* O.R. and B.D.

7342a.——. *Assoc.with* Gold, in quartz. *Loc.* Southern Cross Mine, 1 mile S. of Kingsborough, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* Q.G.M.J., vol. 12, p. 62 (1911).

7343. ——. Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (Stannary Hills Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson (*ante*). *Ref.* G.S.M.

7344. ——. *Assoc.with* Wolfram, Cuprite, Malachite, and Azurite, in defined quartz lodes in slates, etc. *Loc.* Parada Mines, Walsh R., 1 mile N. of Parada Rail. Stn., Chillagoe line, 65 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7345. ——. *Assoc.with* Wolfram, Cassiterite, Iron Pyrites, Copper carbonate, and Mispickel, in diorite dyke. *Loc.* Chance Tin Mine, 5 miles W.byS. of Watsonville, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 119, p. 18 (1897), and 125, p. 40 (1897).

7346. ——. *Assoc.with* Wolfram, Molybdenite, Native Bismuth, Bismutite, Bismuthinite, Mispickel, Scorodite, Cassiterite, and Manganese-dioxide, in irregular masses of quartz in greisen belt. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbullah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7347. ——. *Assoc.with* Wolfram, Molybdenite, Native Bismuth, Bismutite, Molybdite, Mispickel, and Scorodite, in irregular quartz masses in granite. *Loc.* Bamford Wolfram Mines, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

7348. ——. *Assoc.with* Wolfram, in quartz reef. *Loc.* Desert Cr., br. of Lynd R., 9 miles S.S.W. of Fisherton, Tate R., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7349. ——. *Assoc.with* Wolfram, Molybdenite, Tungstite, Native Bismuth, and Bismutite, in quartz reefs. *Loc.* Eight-mile Mountain, 8 miles N.N.W. of Fossilbrook, 28 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7350. ——. *Assoc.with* Wolfram, Molybdenite, and Cassiterite, in defined quartz lodes and leaders in granite. *Loc.* Glen Atherton, Tinaroo Cr., 12 miles S.E. of Mareeba Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* Cook. *Ref.* B.D.

7351. ——. *Loc.* Junction of Cattle Cr. and Walsh R., N.W. of Mareeba Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* — ; *Dist.* Cook. *Ref.* B.D. ?.

7352. ——. *Assoc.with* Wolfram, Molybdenite, Wad, Cassiterite, and Monazite, with traces of Cuprite, Malachite, Azurite, Iron Pyrites, Limonite, Mispickel, and Scorodite, in irregular masses and in defined lodes, in slates and greisen. *Loc.* Nettle's Cr. Wolfram Mines, 4 miles E. of and 3 miles S. of Coolgarra, and between 10 and 14 miles N.E. of Mt. Garnet Rail. Stn. (Mt. Garnet Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* B.D.

7353. ——. *Assoc.with* Copper Ore. *Loc.* Tierney and McQueen's Wolfram Mine, 8 miles from Nymbool Rail. Stn., 36 miles (by rail and road) S.W.byS. of Lappa Junction, Chillagoe line, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7354. ——. *Loc.* Kangaroo Hills Mineral Field, 40 miles S.W. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.M.

7355. ——. *Loc.* nr. Gladstone, 68 miles (by rail) E.S.E. of Rockhampton, 328 miles (by rail) N.N.W. of Brisbane, North Coast line. *Co.* Clinton; *Dist.* **Port Curtis.** *Assay:* Tungstic acid = 75 per cent. *Ref.* G.S.M.

7356. ——. Queensland Scheelite Co.'s Mine, Toweran Run, Burnett R., about 15 miles S.W. of Rosedale Rail. Stn., North Coast line, 49 miles (by rail and road) W.byN. of Bundaberg. *Co.* Bowen; *Dist.* **Wide Bay.** *Ref.* G.S.M.

7357. ——. Imbill Cr., 8 miles from Kandanga, 15 miles S. of Gympie. *Co.* Lennox (*ante*). *Ref.* B.D.

7358. ——. Spicer Bros.' Mine, Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* B.D.

Schlumacher's Mine, Newellton. *Min.Ref.* Copper Ore, *see* 2035; Lead Ore, 5725; Silver, 7480.

Schmidt's (C. H. J.) Bore. *See under* Artesian Bores. No. 213.

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School Reserve, Upper Kholo, 3 miles N. of Ipswich. *Min.Ref.* Iron Pyrites, *see* 5348; Turgite, 7902.

Schorl. *Var. of* Tourmaline, *which see.*

Schuffler's Dam, McMaster's, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3280.

Scolecite. *Syn.* Lime Mesotype. *Compo.*, Hyd. silicate of alumina and lime. A Zeolite. *Colour*, white. *Lustre*, vitreous, silky when fibrous. *H.* = 5-5·5. *Sp.gr.* = 2·16-2·4.

7359. —— (?). *Assoc.with* Calcite, in granite. *Loc.* Mary Mine, Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Analysis:* S_1O_2 = 49·04, Al_2O_3 = 26·64, CaO = 12·24, H_2O (by ignition) = 13·30, Fe_2O_3 = traces—101·22. *Ref.* P.R.S.Q., vol. 4, p. 110 (1887).

7360. —— (?). *Assoc.with* Calcite, in granite. *Loc.* Mexican Mine, Charters Towers Goldfield (*ante*). *Analysis:* S_1O_2 = 47·24, Al_2O_3 = 26·64, CaO = 12·95, H_2O = 14·20, FeO_3 traces. *Ref.* P.R.S.Q., vol. 4, p. 110 (1887).

7361. —— (?). *Assoc.with* Calcite, in granite. *Loc.* Queen Block Extd. Mine, Charters Towers Goldfield (*ante*). *Analysis:* Silica = 46·25, Alumina = 27·35, Iron = traces, Lime = 13·95, water (by ignition) = 13·47. *Ref.* P.R.S.Q., vol. 4, p. 109 (1887).

Scorodite. *Compo.*, Arsenate of iron. *Colour*, pale greenish or brownish. *Streak*, white. *Lustre*, vitreous. *H.* = 3·5-4. *Sp.gr.* = 3·1-3·3.

7362. ——. On surface above Biggenden Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn., Gayndah line, 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.M.

7363. ——. *Assoc.with* Copper carbonate, in quartz. *Loc.* Arbouin Leases, 18 miles W. of Mungana Rail. Stn., Chillagoe line, Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* Cook. *Ref.* (and *Assays*) A.R.D.M., pp. 94, 95 (1898).

7364. ——. *Assoc.with* Wolfram, Cassiterite, Molybdenite, Bismuth (native), Bismutite, and Mispickel, with traces of Copper Pyrites, Cuprite, Tenorite, Azurite, Malachite, Iron Pyrites, Hematite, etc., in irregular masses of quartz and greisen in granite. *Loc.* Boonmoo, 81 miles (by rail) S.W. of Cairns, Cairns-Chillagoe line, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* B.D.

7365. ——. Silver Star Mine, Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

7366. ——. *Assoc.with* Wolfram, Molybdenite, Native Bismuth, Bismutite, Bismuthinite, Scheelite, Mispickel, Cassiterite, and Manganese-dioxide, in irregular masses of quartz, in greisen belt. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbullah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7367. ——. *Assoc.with* Wolfram, Molybdenite, Native Bismuth, Bismutite, Scheelite, Molybdite, and Mispickel, with traces of Copper Pyrites, Tenorite, Chrysocolla. Iron Pyrites, etc., in irregular quartz masses in greisen. Bamford Wolfram Mines, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

7367A.——. *Assoc.with* Wolfram, in quartz. Mark Tapley Mine, Mungana, 149 miles (by rail) W.S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* A.R., p. 234 (1910).

7368. ——. England and Party's Mine, Horn Is. Goldfield, 3 miles S.E. of Thursday Is., Torres Straits. *Co.* Torres; *Dist.* Cook. *Ref.* G.S.M.

7369. ——. *Assoc.with* Mispickel and Iron Pyrites, in quartz. Gummo's Reefing Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 150. p. 13 (1900).

7369A.——. Burnt Hut, Severn R., about 6 miles W.byS. of Ballandean Rail. Stn., 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.M.

7370. ——. *Assoc.with* Iron Pyrites, Mispickel, Cassiterite, Wolfram, and Molybdenite, in quartz. P.A.. Sluicing Claim, Severn R., 6 miles W. of Ballandean Rail. Stn., 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 191, p. 10 (1904).

7371. ——. *Assoc.with* Cassiterite, Iron Pyrites, Mispickel, Zinc Blende, and Hornblende, in slate. *Loc.* Beacroft's Workings, nr. Sundown Cr., 23 miles S.W. of Stanthorpe Rail. Stn. (Main line). *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 191, p. 23 (1904).

7372. ——. *Assoc.with* Mispickel. Lady Jane Mine, Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* O.R.

7373. ——. Peak Vale Stn., 18 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.M.

7374. ——. *Assoc.with* Iron Pyrites, Cerussite, Massicot, Mispickel, and Wolfram. *Loc.* Plant's Leasehold, 4 miles E. of Crow's Nest Rail. Stn., 38 miles (by rail and road) N.N.E. of Toowoomba. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* A.R., pp. 148, 149 (1908).

7375. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Mispickel, in quartz. *Loc.* Bald Hills Reef, Norton Goldfield, 33 miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Assays:* *See* No. 4266. *Ref.* G.S.Q. Pub. 208, p. 14 (1901).

7376. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, Redruthite, Azurite, Malachite, Mispickel, and Zinc Blende, in quartz. Chandler's Reef, Norton Goldfield (*ante*). *Assay:* *See* No. 4269. *Ref.* G.S.Q. Pub. 208, p. 18 (1907).

7377. ——. *Assoc.with* Mispickel. *Loc.* Grey Dawn, Cordalba, nr. Childers, 48 miles (by rail) N.W. of Maryborough (North Coast line). *Co.* Cook; *Dist.* **Wide Bay.** *Ref.* G.S.M.

Scorpion Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4289.

Scotchman Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Scotland Hills, 5 miles S. of Gayndah Rail. Stn. *Min.Ref.* Jaspopal, *see* 7000; Limonite, 5832; Turgite, 7888. *See also under* Gov. Min. Jour., Report No. 35.

Scotsman Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1115.

Scotstown Bore. *See under* Artesian Bores. No. 393.

Scottish Gympie Gold Mines, Gympie Goldfield. *Min.Ref.* Gold, *see* 4481. *See also under* Gov. Min. Jour., Report No. 54.

Scrub Paddock Diggings (Gympie Copper Mines), 30 miles S. of Kilkivan Rail. Stn. *Include* German's or Dry Gully, White's or Manaramby Cr. *Min.Ref.* Azurite, *see* 242; Calcite, 481; Copper, 1841B; Copper Pyrites, 2137-2139; Galena, 2728-2730; Gold (alluvial) 3195, 3196, (reef) 3625, 3626; Hematite, 4700; Iron Pyrites, 5007-5012; Magnetite, 5983; Marcasite, 6500; Mispickel, 6661; Tenorite, 7716.

Geological Note: The rocks are described as "greenstone" in association with hornblendic slates and granite. Gold has been found only in alluvial deposits in the gullies. Quartz reefs occur in the "greenstone," but they have not been proved to be auriferous. *See* G.S.Q. Pub. No. 92, p. 111.

Scrubby Cr., nr. Kingston Rail. Stn. (Beaudesert line). *Min.Ref.* Coal, *see* 1777C. *See also under* Coal Bores.

—— ——, Por. 266, Par. of Yeerongpilly. *Min.Ref.* Coal, *see* 1776.

—— ——, 9 miles S. of Mackay. *Min.Ref.* Cerussite, *see* 1237; Graphite, 4602; Minium, 6632; Mispickel, 6767.

—— —— (N.E. of), trib. of Burnett R. *Min.Ref.* Limestone, *see* 627; Magnesite, 5944.

—— —— Bore. *See under* Artesian Bores. No. 134.

—— Gully, The Springs, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3348.

—— Mt., 5½ miles S.S.E. of Pittsworth Rail. Stn. *Min.Ref.* Clay Ironstone, *see* 1584.

Seabrooks, Oaky Cr., Degilbo. *Min.Ref.* Magnetite, *see* 5981; Turgite, 7887.

Seaforth Estate, about 20 miles N.W. of Mackay. *Min.Ref.* Hematite, *see* 4760. *Geological Note.*—The rocks on the Estate include sandstones, basalt, and diorite, with volcanic tuffs and conglomerates. *See* G.S.Q. Pub. No. 181, p. 6.

Seaview Mine, Ulam Goldfield. *Min.Ref.* Galena, *see* 3057; Gold, 4306; Iron Pyrites, 5397.

Sebuseburn Cr., Duan (Normanby) Is., Brit. New Guinea. *Min.Ref.* Iron Pyrites, *see* 5473.

Secondary Pyrites. *Syn.* Marcasite, *which see.*

Secret Group of Copper Mines, Cloncurry. *Includes* Secret and Shakespeare M. Leases. *Min.Ref.* Copper Pyrites, *see* 2062A; Iron Pyrites, 4917B.

Secretaries for Mines (Ministers)—

Hon. Geo. Thorn, 1877 to 1878.
Hon. J. F. Garrick, 1878.
Hon. Peter McLean, 1878 to 1879.
Hon. J. M. Macrossan, 1879 to 1883
Hon. Albert Norton, 1883.
Hon. William Miles, 1883 to 1887.
Hon. C. B. Dutton, 1887.
Hon. W. O. Hodgkinson, 1887 to 1888.
Hon. J. M. Macrossan, 1888 to 1890.
Hon. W. O. Hodgkinson, 1890 to 1893.
Hon. Isidor Lissner, 1893.
Hon. Robert Philp, 1893 to 1903.
Hon. W. H. Browne, 1903 to 1904.
Hon. J. W. Blair, 1904 to 1908.
Hon. J. Geo. Appel, 1908 to 1909.
Hon. George Jackson, 1909.
Hon. J. Geo. Appel, 1909 to date.

Sedan Bore. *See under* Artesian Bores. No. 242.

Sedenen Bore. *See under* Artesian Bores. No. 237.

Seighford Bores. *See under* Artesian Bores. No. 181.

Selenite. *Var. of* Gypsum, *which see.* USES: *See note under* Calcium.

Sellheim (P.F.). Once Under Secretary for Mines. Term of Office, 1891 to 1899.

Sellheim Bismuth Mines, Eukalunda. *See* Sellheim Mineral Field for other details.

GEOLOGICAL NOTE: The country rock is syenite. The matrix of the bismuth is ironstone, the bismuth, together with copper, being in the form of carbonate. *See* G.S.Q. Pub. No. 57 for notes.

—— Co. *See* Kennedy South Dist. *See map,* Pl. 14.

Sellheim Mineral (Silver) Field—

SITUATION: *See maps,* Pls. 14, 15. Ninety-two miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. Centre about *Lat.* 21° 4′ S.; *Long.* 147° 29′ E.

POPULATION: 60 (?) (1912).

PROCLAMATION OF FIELD: First gazetted, 21st May, 1885; last alteration, 10th January, 1887, as follows:—Commencing at the confluence of the Sellheim and Suttor Rivers, and bounded thence by the northern, eastern, and southern watershed of the Sellheim River easterly, southerly, and westerly; thence by the southern watershed of Charley's Creek westerly to the Suttor River; and by that river downwards to the point of commencement.

AREA: 380,160 acres (594 sq. miles).

PRINCIPAL MINING CENTRE: Ukalunda.

MINERAL STATISTICS:

Silver,	*see tables,*	Pls. 37, 46, 46A.
Bismuth,	,,	Pls. 40, 46, 46A.

STATISTICAL NOTE: Silver (including Lead) and Bismuth are the two most important minerals of the Sellheim Mineral Field. The production of Silver up to the year 1912 was, approximately, 506,679 oz., valued at £68,513; that of Bismuth being 202 tons, valued at £22,793. The quantity of Silver and Bismuth mined on this field, compared to the whole Silver and Bismuth production of the State, is respectively 3·76 and 29·00 per cent.

MINERAL REFERENCES: Gold (aluvial), 3292-3295, (reef) 4145-4147; Silver, 7501-7503, (native) 7561, (Silver Ore) 7564; Lead (Anglesite) 60, (Cerussite) 1288-1293, (Galena) 3012-3022, (Lead) 5726, (Minium) 6633-6639; Copper (Azurite), 231A, 232, (Copper Ore) 2040, (Copper Pyrites) 2266-2268, (Cuprite) 2467, 2468, (Malachite) 6329-6331; Bismuth (Bismite), 314, 315, (Bismuth, native) 350, (Bismuth Ores) 356, (Bismuthinite) 373, 374, (Bismutite) 406-408; Wolfram, 8034B; Manganese (dioxide), 6446, 6447; Zinc Blende, 8169-8172; Iron (Hematite), 4762, 4763, (Iron Pyrites) 5317-5320, (Ironstone) 5591-5593; (Limonite) 5888, (Mispickel) 6768, 6769, (Scorodite) 7372. Other Minerals: Calcite, 511; Clay, 1575, 1576; Gypsum, 4627.

Sellheim Mineral (Silver) Field—*continued:*

GEOLOGICAL NOTE: The prevailing rocks are shales and sandstones of Gympie Formation (Permo-Carboniferous), and dolerite, the latter forming intrusions in the sedimentary rocks. Silver-lead lodes are present in the shales and sandstones, the ore consisting of galena with some zinc blende and iron pyrites. Hornblende granite occurs in the district in contact with the Gympie rocks, and "Desert Sandstone" forms tablelands on the adjacent mountains. *See* G.S.Q. Pub. No. 57 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 48, 57. *See under* Geol. Surv. List for title.

WARDEN: Stationed at Bowen. INSPECTOR OF MINES: Stationed at Charters Towers.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— R., nr. Mt. McConnell Stn., S.W.byS. of Bowen. *Min.Ref.* Calcite, *see* 511; Clay, 1576; Gold (alluvial), 3292-3295.

Sellheim Silver Mines. *See under* Sellheim M.F. for details.

Selma. Cretaceous deposits. G.S.Q.P. 175, p. 10 (1902).

Selwyn. Cloncurry District. Notes are given under Mt. Elliott, the old name.

Selwyn Co. Burke Dist. *See map,* Pl. 20.

Semi-Anthracite. *Var. of* Coal, *which see.*

Semi-bituminous Coal. *See* Coal.

Semi-Opal. *Var. of* Opal, *which see.*

Separation Bore. *See under* Artesian Bores. No. 159.

Serpent Hill Group of Copper Mines, Morris Cr., Cloncurry. *Includes* Serpent Hill Mining Freeholds (5, 6, 7, 8, and 9), and Chum M.C. (329). *Min.Ref.* Cuprite, *see* 2392B; Limonite, 5748B; Malachite, 6087B; Redruthite, 7208B; Tile Ore, 2493B.

Serpentine. *Compo.,* Hyd. silicate of magnesia. *Colour,* green shades. *Streak,* white. *Lustre,* sub-resinous to greasy. *H.* = 2·5-4. *Sp.gr.* = 2·50-2·65.

MINERAL NOTE: Serpentine is commonly the gangue of chromite and asbestos, and is frequently associated with deposits of gold, tin, copper, and wolfram. Usually it occurs as irregular masses or as large ill-defined "belts," but is sometimes interbedded with slate or other altered sedimentary rock. Serpentine has not been used for ornamental work, although deposits exist in numerous localities which could furnish very good material for this purpose. At Canoona a large mass of serpentine has been found to contain traces of gold very finely disseminated through it, and at Kandanga, south-west of Gympie, a large belt of serpentine, extending for many miles, has been proved to contain asbestos of good quality. The serpentine belt to the north-east of Rockhampton seems to be specially favourable for the occurrence of chromite, of which there are several known occurrences in the country about Cawarral.

7378. ——. *Assoc.with* Calcite, Fluorspar, and Siderite, in granite. *Loc.* Golden Gate, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 202, p. 10 (1905).

7379. ——. *Assoc.with* Malachite. *Loc.* Sandy Cr., trib. of Barambah Cr., Ban Ban, 16 miles S.E. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* **Burnett.** *Ref.* P.R.S.Q., vol. 4, p. 70 (1887).

7380. ——. *Assoc.with* Cassiterite and Steatite, in quartzite. *Loc.* Come-by-Chance Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 13, p. 22 (1883).

7381. —— (noble). *Assoc.with* Copper, Cassiterite, and Steatite, in greywacke, jasper, and shale. *Loc.* Good Friday Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 21 (1883), and P.R.S.Q., vol. 15, p. 64 (1900).

7382. ——. *Assoc.with* Malachite. *Loc.* North Australian Mine, Watsonville (*ante*). *Ref.* G.S.M.

7383. —— (fibrous). *Assoc.with* Cassiterite. *Loc.* Pride of the West Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

7384. Serpentine. *Loc.* Iolanthe Tin Mine, Koorboora, 108 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 64 (1900).

7385. ——. *Assoc.with* Cassiterite, Wolfram, and Fluorspar, in quartz lode. *Loc.* Defiance Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 16 (1883). and P.R.S.Q., vol. 4, p. 71 (1887).

7386. —— (fibrous). Gt. Northern Tin Mine, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 64 (1900).

7387. —— (noble). *Assoc.with* Cassiterite, Wolfram, Orthoclase, Steatite, and Chlorite, in quartz lode. *Loc.* Soggoarth Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 6 (1883), and P.R.S.Q., vol. 4, p. 59 (1887).

7388. ——. *Assoc.with* Cassiterite, Steatite, and Viridite, in quartz, in diorite and porphyry. *Loc.* St. Patrick Tin Mines, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, pp. 8, 9 (1883).

7389. ——. *Assoc.with* Chromite. *Loc.* Pine Mountain Rail. Stn., 7 miles (by rail) N.N.W. of Ipswich, and 31 miles (by rail) W.S.W. of Brisbane. *Co.* Churchill; *Dist.* **Moreton.** *Ref.* P.R.S.Q., vol. 4, p. 69 (1887), and G.S.Q. Pub. 194, pp. 55, 56 (1904).

7390. ——. Por. (140), Par. of Dixon, 13 miles E. of Esk Rail. Stn., 70 miles (by rail and road) N.W.byN. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* G.S.M.

7391. ——. *Assoc.with* Gold and Quartz, in gossan. *Loc.* Oaks View Gold Mine, 4 miles N. of Oaks Stn., 45 miles (by road) N.N.W. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 205, pp. 7-16 (1906).

7392. ——. *Assoc.with* Gold. Magnesite, and Chalcedony, in gossan. *Loc.* Oaks View Consld. Mine, 4 miles N. of Oaks Stn. (*ante*). *Ref.* G.S.Q. Pub. 205, pp. 16, 17 (1906).

7393. —— (emerald green). Inter-laminated with quartz. *Loc.* Lady Annie Mine, Cawarral Goldfield, 23 miles (by rail) N.N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* B.D.

7394. ——. *Assoc.with* Jasper. *Loc.* Mt. Warminster, nr. Mt. Chalmers, 20 miles (by rail) N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* B.D.

7395. ——. *Assoc.with* Gold and Chromite. Mt. Wheeler, 3 miles E.N.E. of Cawarral Rail. Stn. (Emu Park line), 26 miles N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* P.R.S.Q., vol. 4 (1887).

7396. ——. **Chrysotile** (*var.*). Shoalwater Bay, 60 miles N. of Rockhampton. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* G.S.M.

7397. —— ——. *Assoc.with* Copper, in altered volcanic rock. *Loc.* Mt. Coora, Black Snake Goldfield, 8 miles S.S.E. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 28, p. 4 (1886), and G.S.M.

7398. —— ——. *Assoc.with* Cobalt. *Loc.* Mt. Coora, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 38, p. 1 (1887), and G.S.M.

7399. —— ——. *Loc.* Wodonga Cr., head of Widgee Cr., 8 miles W. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.M.

——. *See also* Asbestos.

—— Hill, nr. Johansen's Caves, Rockhampton. *Min.Ref.* Actinolite, *see* 4867.

Sesbania Run Bores. *See under* Artesian Bores. Nos. 49, 394.

Seven-mile Diggings, 14 miles S.byE. of Gladstone. *Min.Ref.* Gold (alluvial), *see* 3384.

—— —— ——, Drummond Range, nr. Clermont. *Includes* Nuggety Gully and Seven-mile Gully Leads. *Min.Ref.* Gold (alluvial), *see* 3289, (reef) 4143.

—— —— ——, 7 miles S.E. of Nanango. *Includes* Callaghan's Gully, Yeraman Cr., and Shepherd's Gully. *Min.Ref.* Azurite, *see* 241; Cassiterite, 1172; Cuprite, 2470; Garnet, 3137; Gold (alluvial), 3367, 3368, (reef) 4201, 4202; Iron Pyrites, 5338, 5339; Malachite, 6345; Mispickel, 6777; Ruby, 2364; Sapphire, 2357; Spinel, 7582; Topaz, 7808; Tourmaline, 7867, 7868; Zircon, 8227. *See also under* Gov. Min. Jour., Report 69.

—— —— —— and Two Mile Diggings (between), Clermont. *Min.Ref.* Gold (alluvial), *see* 3290; Ironstone, 5590.

Seventy-Mile Diggings, 19 miles S. of Charters Towers. *Min.Ref.* Galena, *see* 2923; Gold, 3983-3986; Iron Pyrites, 5223, 5224; Hematite, 4735; Psilomelane, 7090; Pyrrhotite, 7160; Silver, 7481.

—— —— Range, 8 miles S. of Charters Towers. *Min.Ref.* Marcasite, *see* 6507.

Severn River. Heads at the Great Dividing Range about 7 miles N. of Stanthorpe (called Broadwater Cr. to Stanthorpe), flows S. and W. into Macintyre R. 70 miles W. of Stanthorpe. Length, about 120 miles. Tributary, Pike's Cr., *see* Pl. 30. *Min.Ref.* Amethyst, *see* 7168; Azurite, 204; Beryl, 293; Bismutite, 402A, 403; Cassiterite, 985, 1008-1018; Cairngorm, 7176; Copper carbonate, 1905; Copper Ore, 2034; Copper Pyrites, 2187-2190; Cuprite, 2444; Diamond, 2575; Galena, 2834, 2835; Garnet, 3117; Gold, 3842; Hyacinth, 8233; Iron Pyrites, 5113-5115, 5119; Malachite, 6250, 6251; Mispickel, 6722-6730; Molybdenite, 6851-6853; Molybdite, 6873; Opal (common), 6973; Rock Crystal, 7189; Sapphire, 2348; Scorodite, 7369A, 7370; Silver, 7474, 7475; Spinel, 7578: Topaz, 7793; Tourmaline, 7858; Wolfram, 7994-7998; Zinc Blende, 8098-8104; Zircon, 8233. *Geol. Note:* Granite is the prevailing rock about the Severn River.

—— Reef, Broughton, nr. Charters Towers. *Min.Ref.* Galena, *see* 2923A; Gold, 3989.

—— R. and Quartz Pot Cr. (junction of), Stanthorpe. *Min.Ref.* Cassiterite, *see* 1013; Diamond, 2577; Sapphire, 2349.

Seymour Bay, Ferguson Is., Brit. New Guinea. *Min.Ref.* Sulphur (native), *see* 7670.

Seymour's Reef, Marengo Goldfield. *Min.Ref.* Copper carbonate, *see* 1918; Copper Pyrites, 2240; Gold, 4076; Iron Pyrites, 5275; Yellow Ochre, 5935.

Shailer's Sel. 261 (?) (407), Slack's Cr., 4½ miles N.E. of Loganlea Rail. Stn. *Min. Ref.* Coal, *see* 1764.

Shakespeare Tin Lease, Koorboora. *Min.Ref.* Cassiterite, *see* 947; Copper Pyrites, 2171; Galena, 2798; Iron Pyrites, 5076; Mica, 6558; Mispickel, 6703.

Shakespeare's Bore. *See under* Artesian Bores. No. 244.

Shallow Box Bore, nr. Townley's (Stewart's Cr.). *See under* Coal Bores.

Shamrock Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1116.

Shannon's Lode (Block 459), Brown's Gully, Stanthorpe. *Min.Ref.* Cassiterite, *see* 979; Molybdenite, 6847; Wolfram, 7983.

Shardon's Claim, 8 miles from Cardwell. *Min.Ref.* Cassiterite, *see* 1149.

Sharer's Sel. (Por. 290), Par. of Jimbour. *Min.Ref.* Coal, *see* 1622A.

Sharkey's Flat, Top Camp Diggings Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3181.

Sharper's Gully, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

Shaughran Copper Claim, Watsonville. *Min.Ref.* Azurite, *see* 192; Cuprite, 2429; Malachite, 6223; Ochre (red), 4812; Tile Ore, 2547.

Shaun O'Farrell and New Zealand S. Lease (634) (now Ellen Harkins 1 N.), Gympie Goldfield. *Min.Ref.* Gold, *see* 4482.

Shaw and Morris Workings, 3½ miles N. of Calliope. *Min.Ref.* Manganese-dioxide, *see* 6463.

Shaw's Bore. *See under* Artesian Bores. No. 224.

Shed Bore. *See under* Artesian Bores. No. 257.

Sheep Station Cr. Flows E. into Retreat Cr. 9 miles N.W. of Anakie Rail. Stn. (Central line). *Min.Ref.* Amethyst, *see* 7170; Cairngorm, 7181; Chalcedony, 1350A; Gold, 3361; Hornblende, 4838; Hyacinth, 8236; Ilmenite, 4902; Jasper, 5643; Magnesite, 5951; Magnetite, 6029; Rutile, 7335; Sapphire, 2355; Spinel, 7581; Topaz, 7806; Tourmaline, 7864; Zircon, 8236.

—— —— ——, Monsildale. *Min.Ref.* Pitchblende, *see* 7069.

Sheep Station Cr. Opal Field, Paroo Mineral Field. 81 miles N.W.byW. of Cunnamulla. *Min.Ref.* Precious Opal, *see* 6961.

—— —— Hill, Calliope Goldfield. *Min.Ref.* Gold, *see* 4259.

Sheep-yard Bore. *See under* Artesian Bores. No. 229.

Shelburne Co. Cook Dist. *See map*, Pl. 8.

Shellmalier Reef, Elphinstone Cr., Ravenswood. *Min.Ref.* Copper Pyrites, *see* 2225; Gold, 4028; Iron Pyrites, 5248; Mispickel, 6748; Zinc Blende, 8143.

Shepherd's Gully, 7-Mile Diggings, 7 miles S.E. of Nanango. *Min.Ref.* Gold (alluvial), *see* 3368.

—— Well, in Winton Township. *Min.Ref.* Coal, *see* 1642.

Sherwood, nr. Brisbane. *Min.Ref.* Halloysite, *see* 4663.

Shipley Sub-artesian Bore. *See under* Artesian Bores. No. 306.

Shipton's Tin Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 813.

Shirley (John), D.Sc.

Geological Survey Publications—

128. Bulletin No. 7. Additions to the Fossil Flora of Queensland, mainly from the Ipswich Formation (Trias-Jura System) (1898).

171. Bulletin No. 18. Notes on Fossil Plants from Duaringa, Ipswich, Dawson River, and Stanwell; and on Fossil Woods from the Ipswich Beds, Boggo Road, Brisbane (1902).

—— Sub-artesian Bores. *See under* Artesian Bores. No. 428.

Shoalwater Bay, 60 miles N. of Rockhampton. *Min.Ref.* Chrysotile, *see* 7396.

Short's Mine, Newelton. *Min.Ref.* Anglesite, *see* 42.

Siberia Bore. *See under* Artesian Bores. No. 344

Siderite. *Syn.* Chalybite. Clay Iron Ore ((in part). *Compo.*, Carbonate of iron. *Colour*, greyish, yellowish. *Streak*, white. *Lustre*, vitreous, inclining to pearly. *H.* = 3·5-4. *Sp.gr.* = 3·83-3·88. *Contents* (*max.*), Iron 48 per cent.

7400. ——. *Assoc.with* Gold, Copper Pyrites, and Tourmaline, in quartz and calcite. *Loc.* Pumpkin Gully, S. of Fisher's Cr., 12 miles E. of Cloncurry. *Co.* Beaconsfield; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 104, p. 4 (1895).

7401. ——. *Assoc.with* Gold, Hematite, and Calcite. *Loc.* Uncle Tom Reef, between Pumpkin Gully and Fisher's Cr., 12 miles E. of Cloncurry (*ante*). *Ref.* G.S.Q. Pub. 10, p. 4 (1885), and P.R.S.Q., vol. 4, p. 73 (1887).

7402. ——. *Assoc.with* Redruthite, Malachite, Turgite, and traces of Gold and Silver, in chloritic schist and slate. *Loc.* Noontide M.L. (239) (Pioneer Chief Group), W. of Cone Cr., $\frac{1}{2}$-mile N. of Duck Cr., 27 miles S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, p. 129 (1908).

7403. —— (crystals). *Assoc.with* Calcite, Fluorspar, and Serpentine, in granite. *Loc.* Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 202, p. 10 (1905).

7404. ——. *Assoc.with* Iron Pyrites and Common Opal. *Loc.* Riverbank Colliery (Burrum Coalfield), $1\frac{1}{4}$ miles S.E. of Howard Rail. Stn. *Co.* Cook; *Dist.* Wide Bay. *Ref.* L.C.B.

7405. ——. Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.M.

7406. ——. *Assoc.with* Cassiterite and Ironstone, in quartzite. *Loc.* Federation Tin Mine, Watsonville, head of James Cr., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 119, p. 24 (1897).

7407. ——. *Assoc.with* Ironstone, Malachite, Tetrahedrite, Limonite, and Manganese-dioxide. *Loc.* Queenslander Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.Q. Pub. 69, p. 7 (1891).

7408. ——. *Assoc.with* Argentine, Galena, and Minium. *Loc.* Target Silver Mine, Dry R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 46 (1887).

7409. ——. One mile W. of junction of 4-Mile and Elphinstone Crs., Upper Burdekin. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

7410. ——. *Assoc.with* Ironstone, Cerussite, and Pyrolusite. *Loc.* Struck Oil Silver Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

7411. ——. *Assoc.with* Gold, Galena, Minium, Cerussite, Anglesite, Iron Pyrites, and Zinc Blende. in quartz lode. *Loc.* Union Mine, Star R. (Argentine) Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886).

7411A. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Coral Tree P.C., Bee Cr. Diggings, Eungella Goldfield. 10 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pubs. 58, p. 2 (1889), 229, p. 29 (1910).

7411B. ——. *Assoc.with* Gold, Iron Pyrites, Limonite, Copper Pyrites, Malachite, Galena, and Zinc Blende, in quartz. *Loc.* Highland Mary P.C., Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), 229, p. 30 (1910).

7412. ——. *Assoc.with* Gold, Mispickel, and Copper Pyrites, in vein of quartz. *Loc.* Faith Reef, Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* Kennedy South. *Assay: See* No. 4124. *Ref.* G.S.Q. Pub. 88, p. 5 (1893).

7413. ——. Glengarry Mine, Normanby Goldfield (*ante*). *Ref.* G.S.M.

7414. ——. *Assoc.with* Gold, Iron Pyrites, Tetrahedrite, Copper Pyrites, Mispickel, Ironstone, and Yellow Ochre, in quartz. *Loc.* Grace Darling Lease (11), Normanby Goldfield (*ante*). *Assay:* *See* No. 4128. *Ref.* G.S.Q. Pubs. 5, p. 6 (1879), 88, p. 12 (1893).

7415. ——. *Assoc.with* Gold, Iron Pyrites, Magnesite, and Dolomite, in quartz. *Loc.* Biddy Walsh Reef, Clermont-McDonald-Flat Road, 3 miles S.S.E. of Clermont Rail. Stn. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 176, p. 18 (1902).

7416. ——. *Assoc.with* Gold, in quartz. *Loc.* New Idea Mine, 3½ miles S.S.E. of Clermont Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 201, p. 80 (1906).

7417. ——. *Assoc.with* Gold, in quartz and calcite. *Loc.* Mountain Maid Reef, Yatton Goldfield, 21 miles S.W. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

7418. ——. *Assoc.with* Gold, Iron Pyrites, Calcite, Steatite, and Felspar. *Loc.* St. Catherine Reef, Yatton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

7419. ——. In well. *Loc.* Eight-mile Plains, 8 miles S.E. of Brisbane. *Co.* Stanley; *Dist.* Moreton. *Ref.* P.R.S.Q., vol. 4, p. 7 (1887).

7420. ——. *Assoc.with* Gold, Galena, and Iron Pyrites, in quartz between walls of slate and diorite (?). *Loc.* Enterprise Reef, on br. of Cochrane Cr., 5½ miles N.W. of Gympie. *Co.* March; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pubs. 52, p. 12 (1889), 159, p. 2 (1907).

7421. ——. **Sphæro-siderite** (*var.*). In basalt. *Loc.* Quarry Reserve, Toowoomba, 101 miles (by rail) W.byS. of Brisbane. *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* P.R.S.Q., vol. 4, p. 74 (1887).

7422. —— ——. Occurs as globular concretions, in vesicular basalt. *Loc.* Pt. Danger, Tweed Heads, 69 miles (by rail) S.E. of Brisbane. *Co.* Ward; *Dist.* **Moreton.** *Ref.* B.D.

Siderites. *See* Meteorite.

Sidmouth Co. Cook Dist. *See map*, Pl. 8.

Silica. MINERALS: *See* Quartz, Opal; *also* Silicates.

Silicates. *Alumina, see* Chiastolite, Cimolite, Cyanite, Halloysite, Kaolin; *alumina and glucina,* Beryl; *alumina, barium, and potash,* Harmotome; *alumina and lime,* Andradite, Gismondite, Heulandite, Laumontite, Prehnite, Scapolite, Scolecite, Zoicite; *alumina, lime, and soda,* Chabazite, Labradorite, Stilbite, Thomsonite; *alumina, lime, and iron,* Epidote; *alumina and iron,* Almandine Garnet, Chloropal, Ottrelite; *alumina, iron, and magnesia,* Vermiculite, Staurolite; *alumina, iron, magnesia, and boron,* Tourmaline; *alumina, iron, magnesia, and potash,* Biotite; *alumina and magnesia,* Chlorite, Pyrope, Penninite; *alumina, potash, and soda,* Nepheline; *alumina and potash,* Muscovite, Pinite, Orthoclase; *alumina, potash, and litha,* Lepidolite; *alumina and soda,* Albite, Analcime, Natrolite, Oligoclase; *bismuth,* Eulytite; *copper,* Chrysocolla, Dioptase; *iron,* Fayalite; *lime,* Wollastonite; *lime and iron,* Lievrite; *lime and potash,* Apophyllite; *lime, magnesia, alumina, and iron,* Actinolite, Asbestos, Augite, Diallage, Hornblende, Tremolite; *magnesia,* Chrysotile, Serpentine, Steatite, Talc; *magnesia and iron,* Bronzite, Hypersthene, Olivine, Viridite; *manganese,* Rhodonite; *nickel and magnesia,* Noumeite; *titanium and lime,* Sphene; *zinc,* Smithsonite, Willemite; *zirconia,* Zircon.

Siliceous Sinter. *Var. of* Opal, *which see.*

Silicon (Si). *Atom.Wt.* = 28·3. *Sp.gr.* = 2·49. *Colour,* steel-blue. *See under* Quartz and Opal. *See also under* Silicates.

USES: As an elementary substance silicon has no industrial uses, but its oxide, silica, in the form of quartz, chalcedony, and opal is of universal application. Combined with other oxides it is found in a large number of minerals, a list of which is given above. Crystalline silicon is of a greyish-white metallic colour, and is chiefly used as a deoxidiser in the refining of steel, and in the manufacture of ferro-carbon alloys. Pure silica sand, with the addition of coke, salt, and sawdust is used in the production of carborundum, now largely replacing emery as an abrasive.

Sillimanite. *Syn.* Fibrolite. *Compo.*, Silicate of alumina. *Colour,* brownish, greyish. *Lustre,* vitreous. *Streak,* whitish. *H.* =6-7. *Sp.gr.* =3·23-3·24.

7423. ——. In schist. *Loc.* In gully S. of Hospital Hill, Ebagoolah, Hamilton Goldfield, 33 miles (by road) W. of Port Stewart, 173 miles N.W.byW. of Cooktown. *Co.* Coen; *Dist.* Cook. *Ref.* L.C.B.

Silsoe, 25 miles S.E. of Fermoy, nr. eastern boundary of the Opalton Mineral Field. *Min.Ref.* Precious Opal, *see* 6951A.

Simpson and Rodger's Bore (Stewart's Cr). *See under* Coal Bores.

Silver (Ag). *Atom. Wt.* = 107·88. *Sp.gr.* = 10·1—11·1, varying with its condition.

MINERALS: *See* Argentite, Cerargyrite, Hessite, Native Silver, Proustite, Pyrargyrite, Stephanite.

MINERAL AND GEOLOGICAL NOTE: The associated minerals include bismuth, copper, gold, silver, iron, lead, manganese, and zinc ores, also mispickel, molybdenite, and stibnite—the two common associates of silver being gold in native gold-silver alloys and lead in galena. The gangues include Calcite, Epidote, Garnet, Kaolin, Mica, Quartz, Steatite, and Wollastonite, the first named being of common occurrence. These minerals occur either as veins, lodes, or irregular formations in slate, schist, limestone, garnet-rock, granite, etc. The age of the silver-bearing deposits are Palaeozoic, the limestone, slates, and schists belonging to the Permo-Carboniferous, Devonian, or Silurian, the garnet-rock and granite probably being of earlier formation.

DISCOVERY: First recorded discovery of silver was made in 1879 at Ravenswood; other discoveries being reported in 1881 at Argentine and Newelton, and in 1884 at Montalbion.

STATISTICAL NOTES: The world's production of silver during 1910 is valued, approximately, at £24,904,154, of which amount Australia is credited with £1,606,488, and Queensland with £92,685, the latter representing 5·77 per cent. of the Australian production, and 0·37 per cent. of that of the world.

The total quantity of silver recovered from all sources in Queensland up to the end of 1912 amounted to 13,497,125 oz., the value being £1,722,319. This represents 1·65 per cent of the value of the whole mineral production of the State, which, to the end of 1912, is valued at £104,009,087.

The year 1908 was the most productive in silver, the total quantity being 1,162,276 oz., the total value £117,889. This is equivalent to 8·61 per cent. of the total *quantity*, and 6·85 per cent. of the total *value* of the whole silver yield of the State.

The Herberton and Chillagoe Gold and Mineral Fields have produced 53·34 per cent. of the whole silver yield of the State, the quantity being approximately 7,199,910 oz., the production taking place between 1883 (the first year of record) and 1912. Then comes the Stanthorpe Mineral Field with a total silver yield of 2,061,345 oz. for the same period, equal to 15.27 per cent. of the whole State's production.

The Ravenswood Goldfield during the four years, 1883 to 1887, yielded silver averaging in value £23,000 per annum, but since 1887 the field has produced very little silver.

See Statistical Tables and Diagrams, Pls. 37, 45, 46, 46A, 48 for further details.

VALUES. *See table under* Metal Values in London for maximum and minimum prices for all years since 1882.

SILVER-LEAD FIELDS AND MINING CENTRES. Silver was once an important product of the Sellheim Mineral Field, where several mines were worked many years ago. Ravenswood, also, was an important centre, very rich lodes being worked there in 1879. Several silver-lead deposits have been opened at Texas and Sundown, in the Stanthorpe Mineral Field, at Lawn Hills in the Burketown Mineral Field, and at Chillagoe. At Lawn Hills large lodes of silver-lead ore exist which will be worked extensively as soon as railway communication is established with the Gulf of Carpentaria. The principal fields are as follows:—

Argentine (Star R.) (nr. Townsville). *See* maps, Pls. 16, 17.
Dry R. (nr. Herberton). *See maps*, Pls. 16, 17, 22.
Emu Plains (nr. Bowen). *See maps*, Pls. 14, 15.
Lawn Hills (nr. Burketown). *See maps*, Pls. 20, 21.
One-mile (nr. Ravenswood). *See maps*, Pls. 16, 17, 29.
Ravenswood. *See maps*, Pls. 16, 17, 29.
Sellheim (nr. Bowen). *See maps*, Pls. 14, 15.
Silverfield (nr. Montalbion). *See maps*, Pls. 8, 9, 22.
Stanthorpe. *See maps*, Pls. 12, 13, 30. Pikedale, Ballandean, Jibbinbar.
Star R. (Argentine), nr. Townsville. *See maps*, Pls. 16, 17.
Texas. *See maps*, Pls. 12, 13, 30. Silver Crown Mine, Silver King Mine, Silver Spur Mine.

See further references under names of fields.

Silver—*continued:*

Smelting Works: *See under* separate heading "Smelting Works in Queensland."

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See under Geol. Surv. Pub. List, Supplementary Report List, and Govt. Ming. Jour. List for titles.

7424. Silver. *Assoc.with* Antimony, Native Copper, Cuprite, Massicot, Copper Carbonate, Graphite (traces), and Calcite, in talcose and silicious shales. *Loc.* Dugald Mine, Dugald R., 45 miles N.W of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 3 (1885).

7424a.——. *Assoc.with* Gold and Ironstone, in quartz. *Loc.* King Edward VII. Claim, Bishop's Cr. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* A.R., p. 282 (1910).

7424b.——. *Assoc.with* Galena and Cerussite, in lode. Lawn Hills Silver-Lead Mines, 92 miles S.W. of Burke. *Co.* Gregory; *Dist.* Burke. *Yield: See* No. 8052. *Ref.* G.S.Q. Pub. 138, p. 2 (1900), 232, p. 45 (1911).

7425. ——. *Assoc.with* Gold and Graphite, in quartz reef. *Loc.* Black Snake P.C., 1 mile E. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 125, p. 37 (1897).

7426. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Waratah Mine, Queen of the Croydon Reef, 1½ mile E.byS. of Croydon Rail. Stn. (*ante*). *Assay:* Gold = 10 oz. 15 dwt. 4 gr. per ton; Silver = 40 oz. 6 dwt. 6 gr. per ton. *Ref.* G.S.Q. Pub. 118, p. 17 (1896), and G.S.M.

7427. ——. *Assoc.with* Gold, Galena, and Copper, in lodes. *Loc.* Woolgar Goldfield, 97 miles (by coach) N. of Richmond Rail. Stn., 404 miles (by rail and road) W.byS. of Townsville. *Co.* Woolgar; *Dist.* Burke. *Ref.* A.R. D.M., p. 42 (1886).

7428. ——. *Assoc.with* Gold. *Loc.* All Nations Reef, Boolboonda Hill, 12 miles N.E. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.Q. Pub. 21, p. 13 (1885).

7429. ——. *Assoc.with* Gold and Iron Pyrites. *Loc.* Gaeta Goldfield, 30 miles N. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Assay: See* No. 3574. *Ref.* A.R., p. 36 (1907).

7430. ——. *Assoc.with* Gold and Carbonate of Copper. *Loc.* Harper's Hill, Mt. Drain, nr. Mt. Perry. *Co.* Bowen (*ante*). *Yields:* Silver = 44 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 27 (1897).

7431. ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* Three miles S. of Mt. Perry, on Eidsvold Road. *Co.* Bowen (*ante*). *Ref.* A.R., p. 158 (1908).

7432. ——. *Assoc.with* Galena. *Loc.* Reid's Cr., 4½ miles S.W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* B.D.

7433. ——. *Assoc.with* Gold, Molybdenite, and Copper Pyrites, in quartz veins. *Loc.* Globe Copper Mine, Wolca, 6 miles N. of Mt. Perry Rail. Stn. *Co* Bowen (*ante*). *Assay: See* No. 2130. *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and B.D.

7434. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Zinc Blende. *Loc.* Allendale Silver Mine, 6 miles N.W. of Chowey Rail. Stn. (Gayndah line), 68 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Assay: See* No. 3567. *Ref.* G.S.Q. Pub. 25, p. 3 (1886), and P.R.S.Q., vol. 4, p. 39 (1887).

7435. ——. *Assoc.with* Gold, Lead, Iron Pyrites, and Magnetite, in lode. *Loc.* Hannan's Silver-Lead Mine, N.E. of Allendale Mine, Chowey Rail. Stn. (*ante*). *Contents: See* No. 3568. *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

7436. ——. *Assoc.with* Gold, Copper Pyrites, Cuprite, Tenorite, Malachite, Iron Pyrites, Mispickel, Hematite, Bismuthinite, Pyrrhotite, Zinc Blende, and Calcite, in lode. *Loc.* Commonwealth Mine, nr. Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), 207, pp. 14-19 (1907).

7437. Silver. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Mispickel, Native Bismuth, Bismuthinite, Magnetite. and Ironstone, in lode. *Loc.* Don Jon Bismuth Mine, ¼-mile S. of Mt. Havilah, 2¼ miles S.S.W. of Degilbo Rail. Stn. (*ante*). *Ref.* G.S.Q. Pubs. 173, p. 4 (1902), 207, pp. 13, 14 (1907).

7438. ——. *Assoc.with* Gold, in lode. *Loc.* Near Bin Bin Range, to the S. of Mt. Shamrock, 12 miles S.E. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* Burnett. *Assays: See* No. 3628. *Ref.* G.S.Q. Pub. 60. p. 6 (1890).

7439 ——. *Assoc.with* Gold, in quartz reef. *Loc.* British Empire Mine, between Murderers and Bennett's Gullies, 14 miles W.byS. of Gayndah Rail. Stn., 104 miles (by rail and road) W. of Maryborough. *Co.* Mackenzie (*ante*). *Ref.* A.R., p. 120 (1907).

7440. ——. *Assoc.with* Lead Ores, nr. Wigton Head Stn., Wooroon, 21 miles S. of Gayndah Rail. Stn. *Co.* Mackenzie (*ante*). *Ref.* O.M.

7441. ——. *Assoc.with* Galena and Massicot. *Loc.* St. John's Cr. Goldfield, Burnett R., 16 miles S.W. of Eidsvold. *Co.* Wicklow; *Dist.* Burnett. *Ref.* G.S.M.

7442. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* St. John's Cr. Goldfield, Burnett R. (*ante*). *Ref.* A.R., p. 59 (1906).

7443. ——. *Assoc.with* Gold, Iron Pyrites, and Limonite, in quartz. *Loc.* Apple-tree Lease, Cabbage-tree Cr., Mt. Cannindah, 40 miles S.W. of Miriam Vale Rail. Stn. (North Coast line). *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 113, p. 9 (1896).

7444. ——. *Assoc.with* Gold, in quartz. *Loc.* Little Wonder Lease, Mt. Cannindah (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 113, p. 9 (1896).

7445. ——. *Assoc.with* Gold, Native Copper, Cuprite, Tenorite, Azurite, and Malachite, in lode. *Loc.* Mt. Cannindah Mine, Mt. Cannindah (*ante*). *Ref.* G.S.Q. Pubs. 105, pp. 6, 7, and 113, p. 7 (1896).

7446. ——. *Assoc.with* Galena and Anglesite. *Loc.* Yarrol Stn., Dawes Range, 25 miles N.W. of Mt. Perry Rail. Stn., 92 miles (by rail and road) W. of Bundaberg. *Co.* Yarrol (*ante*). *Ref.* G.S.M.

7447. ——. *Assoc.with* Gold, in quartz. *Loc.* Gladstone Reef, 4 miles N. of Munburra, Starcke Goldfield, 44 miles N.N.W. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pubs. 209, p. 10 (1907), 223, p. 27 (1909), and A.R., p. 63 (1906).

7448. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Last Hit Reef, Munburra, Starcke Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 209, p. 9 (1907), 210, pp. 31-36 (1909), and A.R. 63 (1906).

7449. ——. *Assoc.with* Mica. *Loc.* Mines at the head of Wandoo Cr., 10 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Bolwarra; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 16 (1898).

7449A.——. *Assoc.with* Anglesite and Cerussite, in lode. *Loc.* Mt. Dee Vall Claim, Castleton, 5 miles S.S.E. of Charleston Rail. Stn., **Etheridge Goldfield.** *Co.* Gilbert; *Dist.* Cook. *Ref.* A.R., p. 200 (1909).

7449B ——. *Assoc.with* Copper Pyrites, Cerussite, Galena, and Limonite, in lode. *Loc.* Mt. Dee Vall Claim, Charleston, 144 miles (by rail) S.W. of Almaden Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert (*ante*). *Ref.* O.R.

7449C.——. *Assoc.with* Galena, Anglesite, Cerussite, and Malachite, in quartz lode. *Loc.* Wright's Leader, Donnyville, 4½ miles S. of Georgetown, Etheridge Goldfield. *Co.* Gilbert (*ante*). *Ref.* A.R., p. 228 (1910).

7450. ——. *Assoc.with* Gold and Lead Ore. *Loc.* Grand Junction P.C., Glenrowan Cr., 20 miles S.byW. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pub. 125, p. 49 (1897).

7450A.——. *Assoc.with* Gold, Copper Pyrites, Chalcanthite, and Copper carbonate, in quartz reef. *Loc.* Elektron Silver Mine, Caledonia Cr., trib. of Goldsmiths Cr., 24 miles S.S.E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 35, p. 6 (1887).

7450B.——. *Assoc.with* Galena, Massicot, and Limonite, in quartz. *Loc.* M.L. 64, Mosquito Cr., about 10 miles S.W.byS. of Charleston Rail. Stn. (Etheridge line), Etheridge Goldfield. *Co.* Gilbert (*ante*). *Assays: See* No. 2756B. *Ref.* A.R., p. 268 (1910).

7450C.——. *Assoc.with* Gold, Galena, Massicot, Anglesite, and Cerussite, in lode. *Loc.* One mile N. of International Mine, Rocky Sandy Cr., 6 miles S.W.byS. of Georgetown, Etheridge Goldfield. *Co.* Gilbert (*ante*). *Assays: See* No. 2757A. *Ref.* A.R., p. 228 (1910).

7450D.——. *Assoc.with* Galena, in quartz. *Loc.* Stockman Mine, between Talbot and Machine Crs., 10 miles S.E.byS. of Georgetown. *Co.* Gilbert (*ante*). *Ref.* A.R., p. 254 (1910).

7451. ——. In gossan ore. *Loc.* Blue Bell Mine, Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe Br. line), **Walsh and Tinaroo Mineral Fields.** *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

7452. ——. *Assoc.with* Galena and Anglesite. *Loc.* Lady Jane Mine, Montalbion (*ante*). *Contents:* Silver = 408 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

7452A.——. *Assoc.with* Tetrahedrite, in pipe vein. *Loc.* Lady Jane Mine, Montalbion (*ante*). *Ref.* G.S.Q. Pub. 119, p. 29 (1897).

7453. ——. *Assoc.with* Galena and Anglesite. *Loc.* North Queensland Silver Mine, Montalbion (*ante*). *Ref.* G.S.Q. Pub. 125, p. 31 (1897).

7454. ——. *Assoc.with* Galena. *Loc.* Star No. 1 Silver Mine, Montalbion (*ante*). *Estimated Contents:* Silver = 46 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

7455. ——. *Assoc.with* Lead Ore. *Loc.* Mountain Maid Mine, 5 miles S. of Montalbion, 12 miles S.S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 49 (1900).

7456. ——. In gossan ore. *Loc.* Albion Silver Mine, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Contents:* Silver = 146 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

7457. ——. *Assoc.with* Galena, Argentite, and Stibnite.. *Loc.* Cumnor Lease, Silverfield (*ante*). *Assay:* Silver = 1,400 oz. per ton. *Ref.* P.R.S.Q., vol. 4, p. 46 (1887).

7458. ——. *Assoc.with* Galena, Iron Pyrites, Copper Pyrites, Mispickel, and Zinc Blende. *Loc.* Tornado Claim, Silverfield (*ante*). *Analysis: See* No. 2155. *Ref.* P.R.S.Q., vol. 4, pp. 48, 52 (1887).

7459. ——. *Assoc.with* Galena. *Loc.* Torphy's Silver-Lead Mine, Crooked Cr., br. of Walsh R., 3½ miles E.N.E. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assay: See* No. 2792. *Ref.* A.R., p. 123 (1907), and A.R.D.M., (1904), p. 149.

7460. ——. *Assoc.with* Copper Ores. *Loc.* Combination Copper Mine, Halpin's Cr., br. of California Cr., S. of Lappa Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 49 (1900).

7461. ——. *Assoc.with* Galena and Cassiterite. *Loc.* Tennyson Tin and Silver Mine, Koorboora, 108 miles (by rail and road) S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Assay: See* No. 2799.

7462. ——. *Assoc.with* Lead Ore. *Loc.* Better Luck Mine, Lappa Junction (Chillagoe-Mt. Garnet line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, pp. 33, 50 (1897).

7463. ——. *Assoc.with* Calcite and Zinc Blende, in lode. *Loc.* Paisley Silver Mine, Muldiva, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 119, p. 35 (1897).

7464. ——. *Assoc.with* Galena. *Loc.* Lady Jane Mine, 1 mile S.E. of Mungana Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*).

7465. ——. *Assoc.with* Copper Ore. *Loc.* McIlwraith Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 33 (1897).

7466. ——. *Assoc.with* Copper and Galena. *Loc.* Penzance Mine, Redcap Cr. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 51 (1897).

7467. ——. *Assoc.with* Cerussite and Malachite, in quartz. *Loc.* Ortho Lease, Ortho Camp, 4 miles N.W. of Calcifer Rail. Stn. (Chillagoe line), 137 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Co.* Lynd; *Dist.* Cook. *Assay:* Silver = 100 oz. per ton. *Ref.* G.S.Q. Pub. 133, p. 10 (1898).

——. For other Walsh and Tinaroo localities, *see* Nos. 7449, 7478, etc.

7468. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz reef. *Loc.* Wise's Shaft, Wise's Knob, Oaks Goldfield, 45 miles E.S.E. of Charleston Rail. Stn. *Co.* Percy; *Dist.* Cook. *Ref.* A.R., p. 164 (1908).

7468A.——. *Assoc.with* Gold, in quartz. *Loc.* Pyramid Hill, Banks (Moa) Island, Torres Strait. *Co.* Torres; *Dist.* Cook. *Ref.* A.R., p. 311 (1911).

7468A1.——. *Assoc.with* Gold, in quartz. *Loc.* About 5 miles from Hayes's Cr. Prov. Goldfield, and about 195 miles N.W. of Cooktown. *Co.* Weymouth; *Dist.* Cook. *Ref.* A.R., p. 287 (1910).

7468B.——. *Assoc.with* Gold, in quartz. *Loc.* Valley of Hills, 6 miles N. of Hayes's Cr. Prov. Goldfield, Cape York Peninsula. *Co.* Weymouth (*ante*). *Ref.* A.R., p. 286 (1910).

7469. ——. *Assoc.with* Iron Pyrites. *Loc.* Border Chief Silver Mine, Jibbinbar, 20½ miles S.byW. of **Stanthorpe** Rail. Stn. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 125, p. 30 (1897).

7470. Silver. *Assoc.with* Gold, Copper Pyrites, and Mispickel, in quartz reef. *Loc.* Fletcher's Sel. (29), Jibbinbar (*ante*). *Assays: See* 3832. *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

7471. ——. *Assoc.with* Galena, Iron Pyrites, Mispickel, and Zinc Blende. *Loc.* Jibbinbar Silver Mine, Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 125, p. 30 (1897).

7472. ——. *Assoc.with* Copper Pyrites, Malachite, and Mispickel, in lode. Min. Area (26), Jibbinbar (*ante*). *Assay:* Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 87, p. 11 (1892).

7473. ——. Pikedale Silver Mine, Woolshed Gully, 20 miles N.W.byN. of Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* O.R.

7474. ——. *Assoc.with* Mispickel, in quartz reef. *Loc.* Sel. (23), Sundown Cr., Severn R., 11 miles W.S.W. of Ballandean Rail. Stn., 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assays:* (1) Silver = 70 oz. per ton. (2) Gold = 2 dwt. 4 gr., Silver = 11 dwt. 23 gr. per ton. *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

7475. ——. *Assoc.with* Gold, Iron Pyrites, and Copper carbonate, in quartz reef. *Loc.* Sel. 24, Sundown Cr., Severn R. (*ante*). *Assay:* Gold = 18 dwt., Silver = 16 oz. per ton. *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

7476. ——. *Assoc.with* Galena, Anglesite, and Massicot. *Loc.* Silvery Wave Mine, Stanthorpe, 38 miles (by rail) S. of Warwick. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 125, p. 30 (1897).

7476A. ——. *Assoc.with* Galena and Cerussite. *Loc.* Macdonald Goldfield, 31 miles W.byS. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* O.R.

7477. ——. *Assoc.with* Galena, Copper Pyrites, and Iron Pyrites. *Loc.* Silver Spur Mine, nr. **Texas,** 43 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Assay:* (1) Silver = 25 oz. per ton. (2) Silver = 70 oz. per ton. *Ref.* G.S.M. and G.S.Q. Pub. 125, p. 51 (1897).

7477A. ——. *Assoc.with* Copper Pyrites, Galena, and Zinc Blende. *Loc.* Claim on Lucky Valley Goldfield, 12 miles S.S.E. of Warwick *Co.* Merivale; *Dist.* Darling Downs. *Ref.* A.R., p. 223 (1910).

7478. ——. *Assoc.with* Galena, Anglesite, Minium, and Malachite. *Loc.* Koh-i-noor Mine, Coolgarra, 12 miles N.E.byN. of Mt. Garnet Rail. Stn. **Walsh and Tinaroo Mineral Fields.** *Co.* Cardwell; *Dist.* **Kennedy North.** *Yield:* Silver = 90 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

7479. ——. *Assoc.with* Gold, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, Chalcanthite, Iron Pyrites, Mispickel, Hematite, Magnetite, Cerussite, Minium, and Zinc Blende, in quartz lodes in quartzite and porphyry. *Loc.* Mt. Garnet Mines, Return Cr., 136 miles (by rail) S.W. of Carins, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

7480. ——. *Assoc.with* Copper and Lead Ore. *Loc.* Schlumacher's Mine, 9 miles S.W. of Herberton, 10 miles S.E.byS. of Stannary Hills (Stannary Hills tram., br. of Chillagoe line). Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

——. For other Walsh and Tinaroo localities, *see* No. 7451, etc.

7480A. ——. *Assoc.with* Gold, Anglesite, Massicot, and Cerussite, in lode. *Loc.* Nr. Bluff Stn., 9 miles S.E. of Mt. Leyshon, 22 miles S.S.E. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* A.R., p. 260 (1910).

7480B. ——. *Assoc.with* Galena and Cerussite. *Loc.* Nr. Chinaman's Gully, about 2½ miles E. of Mt. Leyshon, about 16 miles S.byE. of Charters Towers. *Co.* Davenport (*ante*). *Assay:* Silver = 72 oz.; Lead = 65·2 per cent. *Ref.* A.R., p. 223 (1910).

7480C. ——. *Assoc.with* Gold, Galena, Cerussite, and Limonite, in lode. *Loc.* ¾-mile E. of Mt. Leyshon, 16 miles S. of Charters Towers. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

7480D. ——. *Assoc.with* Gold, Galena, Anglesite, Massicot, and Cerussite, in lode. *Loc.* Right-hand br. of One-mile Gully, 1½ mile S.E. of Mt. Leyshon. *Co.* Davenport (*ante*). *Ref.* A.R., p. 259 (1910).

7481. ——. *Assoc.with* Gold, in quartz. *Loc.* Pyramid or 70-Mile Diggings, 19 miles (by road) S. of Charters Towers. *Co.* Davenport (*ante*). *Assay:* Gold = 6 oz. per ton; Silver = 16 oz. per ton. *Ref.* G.S.M.

7482. ——. *Assoc.with* Gold, in lode 36 ft. wide. *Loc.* Lease (278), Mt. Success, 15 miles N.N.W. of Ravenswood Junction. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 125, p. 58 (1897).

7483. ——. *Assoc.with* Gold, in lode 75 ft. wide. *Loc.* Lease (280), Mt. Success (*ante*). *Assay:* Gold = 1 oz. per ton; Silver = 10 oz. per ton. *Ref.* G.S.Q. Pub. 125, p. 58 (1897).

7484. ——. *Assoc.with* Gold and Galena, in lead ochre. *Loc.* Comstock Silver Mine, near Plumtree Cr., 3½ miles S.E.byE. of **Ravenswood** Rail. Stn., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Assays:* Silver = 81¾ oz. and 19 oz. per ton; Lead = 73·5 and 14½ per cent; Gold = 1 oz. 13 dwt. per ton. *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

7485. ——. *Assoc.with* Galena, Iron Pyrites, Copper Pyrites, Stibnite, and Zinc Blende, in lode. *Loc.* King's Silver Lode, 1 mile N. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 11 (1897).

7486. ——. *Assoc.with* Gold, Galena, and Cerussite, in quartz. Ravenswood Silver Mg. Co.'s Mine, about 1¼ mile N. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Assay:* Silver = 350 to 400 oz., Gold = 2 oz. per ton. *Ref.* P.R.S.Q., vol. 4, p. 47 (1887), and G.S.Q. Pub. 125, p. 34 (1897).

7487. ——. *Assoc.with* Galena. *Loc.* Sandy Cr., 3 miles E.S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Assay:* Silver = 259 oz. per ton; Lead = 65 per cent. *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

7488. ——. *Assoc.with* Gold, and with traces of Copper, Lead, and Bismuth. *Loc.* Paddy's Gully, Mt. Remarkable, Cape R. Goldfield, 66 miles (by rail) S.W.byS. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 37 (1898).

7489. ——. *Assoc.with* Wire Gold and Calcite, and with traces of Copper and Lead, in quartz reef. *Loc.* Upper Cape Diggings, 17 miles W.byN. of Cape R. Rail. Stn., Cape R. Goldfield, 77 miles (by rail and road) W.S.W. of Charters Towers. *Co.* Griffith (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 28 (1887).

7490. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Azurite, and Malachite, in quartz reef. *Loc.* Venture Reef, Marengo Goldfield, 24 miles S.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Assay:* Gold = 1 oz. 6 dwt. 3 gr. per ton; Silver = 6 oz. 12 dwt. 0 gr. per ton. *Ref.* G.S.Q. Pub. 5, p. 11 (1879).

7491. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Bowden and Co.'s Sel. (147), **Star R.** (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.M.

7492. ——. North Star Silver Mine, on br. of Little Star R., Star. R. (Argentine) Mineral Field (*ante*). *Ref.* O.R.

7493. ——. *Assoc.with* Galena, Azurite, and Barytes. *Loc.* Star R. (Argentine) Silver Field (*ante*). *Ref.* L.B. 1, p. 479 (1883).

7494. ——. *Assoc.with* Lead. *Loc.* Andromache R., 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* A.R.D.M., pp. 14, 110 (1896).

7495. ——. *Assoc.with* Gold, in quartz. *Loc.* Junction P.C., Bee Cr. Diggings, 60 miles W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South *Ref.* G.S.Q. Pub. 54, p. 3 (1889).

7496. ——. *Assoc.with* Copper Ore. *Loc.* Emu Plains Silver Field, Bowen R., 50 miles S. of Bowen. *Co.* Carlisle (*ante*). *Assay:* Silver = 2,299 oz. per ton. *Ref.* L.B. 2, p. 231 (1889).

7496A.——. *Assoc.with* Tetrahedrite. *Loc.* Emu Plains Silver Field, Bowen R. (*ante*). *Ref.* G.S.Q. Pub. 54, p. 5 (1889).

7497. ——. *Assoc.with* Gold, in lode. *Loc.* Block (6), Eungella Run, Broken R., 30 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* O.M.

7498. ——. *Assoc.with* Gold, Copper Pyrites, Bismutite, Mispickel, and Hematite, in quartz veins. *Loc.* Gold Workings, Mine Cr., nr. Black Waterhole Cr., 2 miles N.E. of Hazeldean, 37 miles (by rail and road) S.W. of Mackay, Mt. Spencer Gold and Mineral Field. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 164, pp. 10-12 (1901).

7499. ——. *Assoc.with* Gold and Copper. *Loc.* Pine Vale Cr. Copper Mines, 9 miles S.byE. of Eton Rail. Stn., 22 miles (by rail and road) S.byW. of Mackay, Mt. Spencer Gold and Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 164, pp. 10-12 (1901).

7499A.——. *Assoc.with* Gold, in quartz. *Loc.* Albion Reef, Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 5, p. 7 (1879).

7500. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Perseverance Mine, Normanby Goldfield (*ante*). *Ref.* A.R., p. 161 (1908).

7500A.——. *Assoc.with* Malachite, Azurite, and Limonite, in lode. *Loc.* Nr. Finch Hatton Rail. Stn. (Mackay line), 38 miles W.S.W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* A.R., p. 280 (1910)

7500B.——. *Assoc.with* Galena, Anglesite, and Cerussite, in lode. *Loc.* Black Cr., br. of Police Cr., about 30 miles S.byE. of Mt. Wyatt Goldfield. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* A.R., p. 221 (1910).

7501. Silver. *Assoc.with* Galena, Cerussite, Minium, Zinc Blende, Iron Pyrites, and Ironstone, in lode. *Loc.* Rob Roy Silver Mine, Eukalunda, **Sellheim** Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Assays: See* No. 3017. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

7502. ——. *Assoc.with* Galena, Cerussite, and Minium, in lode. *Loc.* Silver King Mine, Sellheim Mineral Field (*ante*). *Assay: See* No. 1293 *Ref.* G.S.Q. Pub. 57, p. 7 (1889).

7503. ——. *Assoc.with* Lead. *Loc.* Sellheim Silver Field Mines, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 57, pp. 2-7 (1889).

7504. ——. *Assoc.with* Gold, Malachite, and Mispickel, in quartz. *Loc.* Ironbark Mine, Miner's Cr., Sandy Cr., Collaroy, 25 miles N.W. of St. Lawrence. *Co.* Killarney; *Dist.* **Leichhardt.** *Assay: See* No. 4181. *Ref.* G.S.Q. Pub. 141, p. 4 (1898).

7505. ——. *Assoc.with* Gold (traces), Copper carbonate, Tile Ore, and Minium, in quartz and steatite. *Loc.* Reef or Lode, 4 miles N.W. of junction of Tierawoomba and Boothill Crs., 50 miles S.S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Assay:* Silver = 25 oz. per ton; Gold = trace. *Ref.* G.S.Q. Pub. 39, p. 7 (1887).

7505A.——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Tally Ho Claim, Mt. Spencer Run, about 10 miles S. of Eton Rail. Stn. (Mackay line). *Co.* Wodehouse (*ante*). *Ref.* A.R., pp. 284, (1910), 317 (1911).

7506. ——. *Assoc.with* Gold, Galena, Iron Pyrites, Mispickel, and Zinc Blende. *Loc.* Monsildale Silver Mine, Por. 46, Par. of Monsildale, 35 miles N.byW. of Esk Rail. Stn. (Brisbane Valley Br.), 102 miles (by rail and road) N.N.W. of Brisbane. *Co.* Cavendish (*ante*). *Assays: See* No. 4205. *Ref.* A.R., p. 169, pp. 1-4 (1901).

7507. ——. *Assoc.with* Gold, Lead, and Bismuth, in clay. *Loc.* Mt. Langan, nr. Blackall, 32 miles N.W. of Esk Rail. Stn., 71 miles (by rail and road) of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Average of 7 Assays:* Gold = 9 gr. per ton; Silver = 7 oz. 12 dwt. 16 gr. per ton. *Ref.* A.R., pp. 64, 65 (1906).

7507A.——. *Assoc.with* Gold, Galena, and Zinc Blende, in lode. *Loc.* Langan's Mine, Mt. Langan (*ante*). *Ref.* A.R., p. 213 (1910).

7508. ——. *Assoc.with* Gold and Copper. *Loc.* Taromeo, 20 miles N.N.W. of Kannangur Rail. Stn. (Brisbane Valley line), 103 miles (by rail and road) N.W. of Brisbane. *Co.* Cavendish (*ante*). *Assays: See* No. 4205. *Ref.* A.R., p. 71 (1906).

7508A.——. *Assoc.with* Gold and Hematite. *Loc.* Dundas, 16 miles N.N.W. of Ipswich. *Co.* Stanley; *Dist.* Moreton. *Ref.* A.R., p. 316 (1911).

7509. ——. *Assoc.with* Gold and Iron Pyrites, in quartz and slate. *Loc.* Samson Cr., Samford, 8 miles W.N.W. of Enoggera Rail. Stn. *Co.* Stanley (*ante*). *Ref.* O.R.

7509A.——. *Assoc.with* Gold, in quartz. *Loc.* 2 miles S. of Kingston Rail. Stn. (Beaudesert line), 19 miles S.E.byS. of Brisbane. *Co.* Stanley (*ante*). *Ref.* A.R., p. 275 (1910).

7510. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Bethania Junction (South Coast line), 21 miles (by rail) S.S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Assay: See* 4216. *Ref.* A.R., p. 51 (1906).

7510A.——. *Assoc.with* Gold, in quartz. *Loc.* Por. 158, Par. of Boyd, 4 miles S. of Beenleigh. *Co.* Ward (*ante*). *Ref.* (and *Assays*) Q.G.M.J., vol. 11, p. 418 (1910).

7511. ——. *Assoc.with* Gold, Cassiterite, Platinum, and Monazite, in beach deposits. *Loc.* Currumbin Cr. to Pt. Danger, Tweed Heads, 69 miles (by rail) S.S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* (and *Analyses*) G.S.Q. Pub. 198 (1905).

7512. ——. *Assoc.with* Gold. *Loc.* 4 miles S. of Nerang Rail. Stn., South Coast line, 53 miles (by rail and road) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* A.R., p. 83 (1907).

7513. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Tunnel, nr. Southport, 50 miles (by rail) S.E. of Brisbane. *Co.* Ward (*ante*). *Ref.* A.R., p. 150 (1908).

7514. ——. *Assoc.with* Galena. *Loc.* Silver Queen Mine, Barmundoo Goldfield, 28 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.M.

7515. ——. *Assoc.with* Gold (traces), Ironstone, Wollastonite, Epidote, and traces of Copper carbonate, in limestone, garnet rock, and granite. *Loc.* P. Area (49), Diglum Cr., Barmundoo, 28 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 162, pp. 6, 9 (1901).

7516. ——. *Assoc.with* Gold, Azurite, Malachite, and Mispickel, in quartz, ironstone, and clay. *Loc.* P. Area (56), Diglum Cr., Barmundoo, 28 miles S.byW. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 162, p. 9 (1901).

7517. ——. *Assoc.with* Gold, Galena, Cerussite, Anglesite, Massicot, Minium, Hematite, and Limonite. *Loc.* Bompa Silver-Lead Mines, **Glassford Cr.,** 2 miles W.byS. of Littlemore Rail. Stn. (Boyne-Valley line), 53 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 159, pp 7, 8 (1901).

7518. ——. *Assoc.with* Gold, Iron Pyrites, Zinc Blende, and Galena, in quartz and calcite. *Loc.* All-Nations' Reef, **Norton Goldfield,** 33 miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pub. 208, p. 13 (1907).

7519. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Zinc Blende, and Malachite, in quartz. *Loc.* Brigham Young (Todman's Tapautohounga) Mine, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, pp. 15, 16 (1907).

7520. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Redruthite, Azurite, Malachite, Mispickel, Zinc Blende, and Scorodite, in quartz. *Loc.* Chandler's Reef, Norton Goldfield (*ante*). *Assay: See* No. 4269. *Ref.* G.S.Q. Pub. 208, p. 18 (1907).

7521. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Mispickel, and Zinc Blende, in quartz. *Loc.* Conran's Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 58, p. 8 (1890).

7522. ——. *Assoc.with* Gold, in quartz. *Loc.* Dent's Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 19 (1907).

7523. ——. *Assoc.with* Gold, Galena, Iron Pyrites, Copper Pyrites, and Zinc Blende, in quartz. *Loc.* Galena Reef, Norton Goldfield (*ante*). *Assay: See* No. 3048. *Ref.* G.S.Q. Pub. 208, pp. 22-24 (1907).

7524. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, Galena, Zinc Blende, and Redruthite, in quartz. *Loc.* Goody's (Carmichael's) Reef, Norton Goldfield (*ante*). *Assay:* Gold = 19 dwt. per ton; Silver = 16 oz. 8 dwt. per ton. *Ref.* G.S.Q. Pub. 208, p. 26 (1907).

7525. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Mispickel, and Zinc Blende, in quartz. *Loc.* Little Wonder Reef, Norton Goldfield (*ante*). *Assay: See* No. 4280. *Ref.* G.S.Q. Pubs. 21, p. 7 (1885), 208, p. 29 (1907).

7526. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in quartz and calcite. *Loc.* Marodian Reef, Norton Goldfield. *Ref.* G.S.Q. Pub. 208, p. 32 (1907).

7527. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, Zinc Blende, and Galena, in quartz and calcite. *Loc.* Who'd-Ha'-Thought-It Reef, Norton Goldfield. *Assay: See* No. 4294. *Ref.* G.S.Q. Pubs. 21, p. 6 (1885), and 208, p. 39 (1907).

7527A. ——. *Assoc.with* Gold and Hematite, in quartz. *Loc.* Found-at-Last Mine, One Tree Hill, 1 mile S. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* (and *Assays*) Q.G.M.J., vol. 3, pp. 606, 607 (1902).

7527B. ——. *Assoc.with* Gold and Mispickel, in quartz. *Loc.* Archer Reef, Targinie Goldfield, 4 miles N.N.W. of Yarwun Rail. Stn. (North Coast line). *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* (and *Assays*) Q.G.M.J. vol. 2, pp. 529-530 (1901).

7527C. ——. *Assoc.with* Gold, in quartz. *Loc.* Targinie Reefs, Targinie Goldfield (*ante*). *Ref.* Q.G.M.J., vol. 2, pp. 529-530 (1901).

7527D. ——. *Assoc.with* Gold, Galena, Zinc Blende, and Copper Pyrites, in quartz reef in diorite country. *Loc.* Britannia Mine, N. of Lake Learmouth, Canoona Goldfield, 35 miles N.byW. of Rockhampton. *Co.* Liebeg; *Dist.* Port Curtis. *Assay: See* No. 3058A. *Ref.* B.D.

7528. ——. *Assoc.with* Gold and Copper Pyrites. *Loc.* about ¼-mile from Baree Rail. Stn., 1 mile N. of Mt. Morgan Rail. Stn., 23 miles (by rail) S.S.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Assay: See* No. 2296. *Ref.* A.R., p. 47 (1906).

7529. ——. *Assoc.with* Gold, in quartz. *Loc.* Coolcoora, 14 miles (by rail) E.N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* A.R., p. 47 (1906).

7530. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, with traces of Zinc Blende, Galena, Azurite, Malachite, Witherite, Barytes, Earthy Hematite, and Red Jasper, in massive lode in quartzite, ironstone, and shale. *Loc.* Gt. Fitzroy Copper and Gold Mine, Mt. Chalmers, 19 miles (by rail) N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Average Assays:* Gold = 3½ dwt., Silver = 1 oz. per ton; Copper = 4½ per cent. *Ref.* G.S.Q. Pub. 216 (1907).

7531. ——. *Assoc.with* Cuprite, Tenorite, Malachite, Cerussite, Iron Pyrites, Zinc Blende, and Barytes, in serpentinous shales, etc. *Loc.* Mt. Warminster Copper-Lead Mine, 20 miles (by rail) N.E. of Rockhampton, Cawarral Goldfield. *Co.* Livingstone (*ante*). *Ref.* B.D.

7531A. Silver. *Assoc.with* Telluride of Gold, Iron Pyrites, and Zinc Blende, in calcite and quartz. *Loc.* Anglo Saxon Mine, Mt. Usher, 6 miles N.E. of Mt. Morgan Rail. Stn., 30 miles (by rail) S.S.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* O.R.

7532. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Hematite, Magnetite, Limonite, Göthite, and Pyrolusite, in vesicular quartz, quartzite, kaolin, and ironstone. *Loc.* Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhamptan. *Co.* Raglan; *Dist.* Port Curtis. *Refs.* (and *Assays*) G.S.Q. Pubs. 17 (1884), 47 (1888), 83 (1892), and 132 (1898).

7533. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Black Snake Reef, Black Snake Goldfield, 10 miles S. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.Q. Pub. 28, p. 5 (1886), and G.S M.

7534. ——. *Assoc.with* Gold, in quartz. *Loc.* Homeward Bound Reef, Black Snake Goldfield (*ante*). *Ref.* G.S.M.

7535. ——. *Assoc.with* Gold and Copper Ores. *Loc.* Kilkivan Gold Mine, Black Snake (*ante*). *Ref.* G.S.Q. Pub. 125, p. 36 (1897).

7536. ——. *Assoc.with* Gold, Copper Pyrites, Redruthite, Pyrrhotite, Mispickel, Galena, and Stibnite. *Loc.* Mariner's Reef, Black Snake Goldfield. *Assays and Analyses: See* No. 2318. *Ref.* G.S.Q. Pub. 28, p. 6 (1886).

7537. ——. *Assoc.with* Gold, Native Copper, Copper carbonate, and Galena, in lode. *Loc.* Mt. Terrible Lode, Black Snake Goldfield (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

7538. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, Mispickel, Zinc Blende, and Schorl, in quartz. *Loc.* Victoria Reef, Black Snake Goldfield (*ante*). *Ref.* G.S.M., G.S.Q. Pub. 28, p. 7 (1886).

7539. ——. *Assoc.with* Gold, Iron Pyrites, and Tenorite, in quartz. *Loc.* Stoney Ridge, Black Snake Goldfield (*ante*). *Ref.* G.S.M.

7540. ——. *Assoc.with* Gold and Copper Pyrites. *Loc.* Blue Bell P. Area, 32 miles from Gympie. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* B.D.

7541. ——. *Assoc.with* Gold. *Loc.* Chinaman's Cr., trib. of Mary R., Mt. Ubi, Blackall Range, 15 miles W. of Palmwoods Rail. Stn., North Coast line. *Co.* Lennox (*ante*). *Ref.* A.R., p. 83 (1907).

7542. ——. *Assoc.with* Gold, in quartz. *Loc.* Chinaman's Cr., trib. of Mary R. (*ante*). *Ref.* A.R., pp. 95, 96 (1907).

7543. ——. *Assoc.with* Gold, in quartz. *Loc.* S.E. of Devil's Mountain, 17 miles N.W. of Gympie. *Co.* March; *Dist.* Wide Bay. *Assay: See* No. 4549. *Ref.* A.R., p. 160 (1908).

7544. ——. *Assoc.with* Galena. Fat Hen Cr. Mine, Gympie Goldfield (*ante*). *Assay: See* No. 3081. *Ref.* G.S.Q. Pub. 125, p. 52 (1897).

Silver (native). *Compo.*, Silver, with some gold, copper, etc. *Colour and Streak*, silver-white; often with a blackish tarnish. *H.* = 2·5-3; *Sp.gr.* = 10·1-11·1.

7545. ——. *Assoc.with* Cerargyrite. *Loc.* Croydon Queen No. 2 S. Mine, 1 mile N. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist* **Burke.** *Ref.* G.S.M.

7545A. ——. *Assoc.with* Gold and Limonite, in quartz. *Loc* Miner's Right Lease (Queen of Croydon Reef), about 1 mile E.byS. of Croydon Rail. Stn., Croydon Goldfield (*ante*).

7546. ——. *Assoc.with* Gold, in quartz. *Loc.* Golden Gate, and other Reefs on the Croydon Goldfield (*ante*). *Ref.* B.D.

7547. ——. *Assoc.with* Ironstone. *Loc.* True Blue Reef, 1¾ mile N.W.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Assay:* Gold = 4 oz, Silver = 200 oz. per ton. *Ref.* B.D.

7548. ——. *Loc.* Waratah Reef, 1½ mile E.byS. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.M.

7549. ——. *Loc.* Nannan Mine, Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn., Chillagoe Br. line, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.M.

7550. ——. *Assoc.with* Copper Ores. *Loc.* Nelly Mine, Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd (*ante*). *Ref.* G.S.Q. Pub. 125, p. 34 (1897).

7551. ——. *Assoc.with* Cassiterite. *Loc.* Mine adjoining the Tennyson, Koorboora, 108 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*).

7552. ——. *Assoc.with* Malachite and Azurite, in slate. *Loc.* Muldiva Mines, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7553. ——. *Assoc.with* Gold and Native Copper. *Loc.* Noble Island, 74 miles W.byN. of Cooktown. *Co.* Melville; *Dist.* Cook. *Assay:* Gold = 3 dwt. per ton; Silver = 240 oz. per ton. *Ref.* Q.G.M.J., p. 263 (1908).

7554. ——. In quartz. *Loc.* Chandie Chank Lode, Gilberton, 24 miles S.byE. of Charleston Rail. Stn., Etheridge line, Etheridge Goldfield. *Co.* Victor; *Dist.* Cook. *Ref.* G.S.M.

7555. ——. In copper stained gossan. *Loc.* Silver Spur Mine, nr. Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 191, p. 28 (1904).

7556. ——. *Assoc.with* Galena, Cerussite, Malachite, Chrysocolla, Mispickel, Zinc Blende, Manganese-dioxide, and Hematite, in kaolin lode. *Loc.* Hidden Treasure Lease (165), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* **Kennedy North.** *Assays: See* No. 1241. *Ref.* G.S.Q. Pub. 82, p. 7 (1892), and 71, p. 8 (1891).

7557. ——. *Assoc.with* Copper Pyrites, Bornite, Cuprite, Copper carbonate, and Galena, in lode. *Loc.* True Blue Lease (161), Kangaroo Hills Mineral Field (*ante*). *Assays: See* No. 427. *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

7558. ——. *Loc.* Hero Silver Mine, Star R. (Argentine) Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction, Great Northern line, 104 miles (by rail and road) W.S.W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.M.

7559. ——. *Assoc.with* Barytes. *Loc.* King Solomon II. Mine, Emu Plains Silver Field, E. bank of Bowen R., 3½ miles N.E. of Emu Plains Stn. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.M.

7560. ——. *Assoc.with* Tetrahedrite and Bornite, in quartz. *Loc.* Silver King Copper Mine, Eungella Range, 10 miles W. of Finch Hatton Rail Stn. (Mackay line) *Co.* Carlisle (*ante*). *Ref.* O.R

7561. ——. *Assoc.with* Galena and Copper Ore. *Loc.* Sunbeam Silver Mine, Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* W.E.C

7562. ——. *Assoc.with* Native Copper and Malachite, in lode. *Loc.* Red Queen Mine, nr. Taromeo, 68 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 159, p. 25 (1901).

7563. —— (Ore). *Loc.* Comstock Silver Mine, Lappa Junction Rail. Stn. and Mines (Chillagoe-Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 125, p. 50 (1897).

7564. ——. *Loc.* Sunbeam Mine, Eukalunda, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* **Kennedy South.** *Ref.* G.S.M.

7565. ——. *Assoc.with* Native Bismuth and Gold Ores. Emu Cr., about 10 miles N.W. of Cressbrook. *Co.* Cavendish; *Dist.* **Moreton.**

7566. ——. *Loc.* Carmilla Mine, 30 miles N. of St. Lawrence. *Co.* Murchison; *Dist.* Port Curtis. *Contents:* Silver = 25 oz. per ton. *Ref.* B.D.

—— arsenide. *See* Proustite.

—— chloride. *See* Cerargyrite.

—— Crown Mine, Dargalong. *Min.Ref.* Cerussite, *see* 1201; Minium, 6588.

—— —— ——, 4 miles E. of Silver Spur, Stanthorpe. *Min.Ref.* Copper Pyrites, *see* 2194; Galena, 2838.

Silver Fields. *See* Silver-Lead Fields *under* Silver.

—— Hill Lode, Montalbion. *Min.Ref.* Anglesite, *see* 26.

—— —— Lease, Silverfield. *Min.Ref.* Anglesite, *see* 21; Galena, 2779.

—— King Mine, Cattle Cr., W.S.W. of Mackay. *Min.Ref.* Bornite, *see* 430, 430A; Malachite, 6325C; Silver (native), 7560; Tetrahedrite, 7773.

—— —— ——, Sellheim Mineral Field. *Min.Ref.* Cerussite, *see* 1293; Galena, 3018; Minium, 6637; Silver, 7502.

—— —— ——, Texas, Stanthorpe. *Min.Ref.* Anglesite, *see* 38; Cerussite, 1217; Copper carbonate, 1906; Galena, 2839; Redruthite, 7284.

—— —— —— (Kant's), Lawn Hills. *Min.Ref.* Galena, *see* 2695.

—— Knob P.A., Mt. Langan. *Min.Ref.* Anglesite, *see* 61; Copper Pyrites, 2277; Galena, 3033; Gold, 4196; Iron Pyrites, 5336; Limonite, 5898; Massicot, 6547; Mispickel, 6776.

—— Lead Deposits, on Por. 46, Par. of Monsildale. *Min.Ref.* Galena, *see* 3026; Gold, 4190; Iron Pyrites, 5329B; Mispickel, 6772; Silver, 7506; Zinc Blende, 8173.

Silver Lease (No. 2), Bee Cr. Diggings. *Min.Ref.* Iron Pyrites, *see* 5295.

—— Queen Mine, Barmundoo Goldfield. *Min.Ref.* Galena, *see* 3038; Silver, 7514.

—— —— ——, Severn R., Stanthorpe. *Min.Ref.* Copper Pyrites, *see* 2188; Galena, 2834; Iron Pyrites, 5114; Malachite, 6251; Mispickel, 6726; Zinc Blende, 8101.

—— —— —— (2 miles of), Stanthorpe. *Min.Ref.* Ironstone, *see* 5540.

—— Sel. 169, Star R. (Argentine) Mineral Field. *Min.Ref.* Cerussite, *see* 1280; Galena, 2993; Lead Ochre, 5731.

Silver Spur Mine—

Situation : *See maps,* Pls. 12, 13. Eight miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Lat.*, 28° 56′ S.; *Long.*, 151° 22′ E. Discovered in 1890 by John White.

Mineral Statistics : *Included in* Stanthorpe Returns.

Mineral References : Gold, 3843; Silver, 7477, (native) 7555, (Pyrargyrite) 7114; Lead (Cerussite), 1218, (Galena) 2840; Copper (Azurite) 204A, (Copper Pyrites) 2195, (Cuprite) 2446, (Malachite) 6252, (Tile Ore) 2551; Antimony (Cervantite), 1307, (Stibnite) 7637; Zinc (Calamine) 441, (Smithsonite) 7569, (Zinc Blende) 8106; Iron (Iron Pyrites) 5117, 5118, (Ironstone) 5541, 5542; Graphite, 4595. Other Minerals: Ankerite, 66; Calcite, 491; Mineral Water, 6569; Proustite, 7078A; Selenite, 4640.

Geological Note : The country rocks around the Silver Spur Mine are clay shales, with occasional beds of sandstone, grit, conglomerate, and limestone. These rocks have been disturbed more or less by faults and by intrusive diorite dykes. The ore deposits are in the form of bunches, and closely connected with the faults, one of which, more strongly developed than the others, is referred to as the main fissure. *See* G.S.Q. Pub. Nos. 191 and 119 for details.

Discovery : Copper was discovered at Silver Spur by Mr. John White in 1890.

Geological Publications : Reports—Nos. 120 (1898), 150 (1899), 191 (1904). *See under* Geol. Surv. Pub. List for title.

Warden : Stationed at Stanthorpe. Inspector of Mines : Stationed at Gympie.

Smelting Works : *See under* Smelting Works in Queensland.

—— —— —— (3 miles N.W. of), W.S.W. of Stanthorpe. *Min.Ref.* Galena, *see* 2841; Malachite, 6254.

—— —— —— (6 miles N. of), Texas, Stanthorpe. *Min.Ref.* Manganese-dioxide, *see* 6420; Turgite, 7896.

—— —— —— (5 miles from), W.S.W. of Stanthorpe. *Min.Ref.* Stibnite, *see* 7638A.

—— Star Mine, Montalbion. *Min.Ref.* Scorodite, *see* 7365.

—— Streak Mine, Dry R., 12 miles S.S.W. of Herberton. *Min.Ref.* Cerussite, *see* 1220; Copper carbonate, 1911; Galena, 2855; Ironstone, 5546; Massicot, 6535.

—— sulphides. *See* Argentite, Proustite, Pyrargyrite, and Stephanite.

—— telluride. *See* Hessite.

Silver Valley. *See* Newelton.

—— —— Silver Mine, Dry R., br. of Wild R., S.S.W. of Herberton. *Min.Ref.* Galena, *see* 2856.

—— values. *See under* Metal Values.

—— Wave Mine, Ravenswood Goldfield. *Min.Ref.* Barytes, *see* 274.

Silverdale Bore. *See under* Artesian Bores. No. 229.

Silverfield, 1 mile S. of Montalbion. *See maps,* Pls. 8, 9, 22. *Min.Ref.* Anglesite, *see* 18-21; Argentite, 94; Cassiterite, 878; Cerargyrite, 1181; Copper Pyrites, 2155; Galena, 2774-2782; Iron Pyrites, 5060, 5061; Mispickel, 6689; Pyrargyrite, 7112; Silver, 7456-7453; Stibnite, 7627-7628; Zinc Blende, 8081A-8083.

Geological Note : The rocks comprise sandstones, shales, grits, and granite. A lode carrying silver, galena, iron pyrites, and zinc blende occurs in the sedimentary rocks close to the granite. *See* G.S.Q. Pub. No. 119 for details and map.

Silverwood, 10 miles (by rail) S. of Warwick. *Min.Ref.* Limestone, *see* 647. The rocks include limestones and shales of Gympie Formation (Permo-Carboniferous). Large deposits of limestone occur between 2 and 4 miles to the south of the railway station. *See* Limestone Analysis *under* Calcite.

Silvery Wave Claim, Stanthorpe. *Min.Ref.* Anglesite, *see* 37; Galena, 2836; Massicot, 6532; Silver, 7476.

Simkin's Bore. *See under* Artesian Bores. No. 335.

Sim's Mine, Spring Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1022.

Sinter (calcareous). *Var. of* Calcite, *which see.*

—— (siliceous). *Var. of* Opal, *which see.*

Sir Garnet (Highland Mary) Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3524.

—— Henry Havelock Reef, Etheridge Goldfield. *Min.Ref.* Copper Pyrites, *see* 2146; Galena, 2748; Gold, 3720; Iron Pyrites, 5041.

—— Walter Reef, Croydon Goldfield. *Min.Ref.* Chlorite, *see* 1426; Graphite, 4585; Gold, 3494; Ironstone, 5498.

—— Wm. Alfred Reef, Lane's Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3715.

Six-mile Cr., Leichhardt R., Cloncurry. *Min.Ref.* Chrysocolla, *see* 1512-1515; Copper (native), 1986, 1987; Copper Pyrites, 2108-2114; Cuprite, 2411B-2415; Limonite, 5812-5820; Malachite, 6174-6182; Redruthite, 7262-7266; Tile Ore, 2531-2537.

—— ——, Etheridge Goldfield. *Min.Ref.* Magnesite, *see* 5945.

—— —— (2 miles W. of), Gilberton, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2826.

—— ——, 24 miles E. of Gympie. *Min.Ref.* Hyalite, *see* 7022.

—— ——, br. of Tate R., nr. Fisherton. *Min.Ref.* Cassiterite, *see* 940.

—— —— Bores. *See under* Artesian Bores. Nos. 350, 381.

Sixty-five Mile (from St. George) Bore. *See under* Artesian Bores. No. 47.

Skardon's (Quetta) Mine, Dargalong. *Min.Ref.* Anglesite, *see* 35; Cerussite, 1200; Ironstone, 5528.

Skeleton Cr. Bore. *See under* Artesian Bores. Nos. 293, 376.

Skertchly (S. B. J.)—

Geological Survey Publications—

115. The Deep Tin Lead, Herberton, 1896.

119. The Tin Mines of Watsonville, and various Tin, Silver, Gold and Copper Mines at Herberton, Mount Albion, Irvinebank, Muldiva, Calcifer, Chillagoe, California Creek, the Tate River, Mareeba, etc. 1897.

120. The Stanthorpe Tin Mining District, and the Goldfields in the neighbourhood of Warwick. 1898.

Skyring's Manganese Mine, Pie Cr., nr. Gympie. *Min.Ref.* Manganese-dioxide, *see* 6494; Pyrolusite, 7134.

Slack's Creek, 1½ mile E. of Loganlea Rail. Stn. *Min.Ref.* Clay Ironstone, *see* No. 1589, Coal, 1764.

Slade Vale, nr. Warwick. *Min.Ref.* Hematite, *see* 4726.

Slasher's Creek Bore. *See under* Artesian Bores. Nos. 194, 432.

Slate Deposits. There are many localities in the State where the occurrence of fissile slates have been noted. No prospecting has been undertaken to determine their value.

Slaty Creek Mining Centre, Cloncurry. *Includes* Hilda and Timberoo Group of Copper Mines.

MINERAL REFERENCES: Calcite, *see* 458; Copper Pyrites, 2086, 2087, 2098-2100; Cuprite, 2402; Limonite, 5792-5797; Malachite, 6127-6129; Redruthite, 7232, 7233, 7251, 7252; Tile Ore, 2514, 2515, 2527, 2528; Tourmaline, 7816.

—— ——, E. of Mackenzie R., S.W.byW. of Rockhampton. *Min.Ref.* Manganese-dioxide, *see* 6450.

Slaughteryard Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

—— Lead, Black Ridge, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3315.

Sleeping Beauty Mine, Bompa Goldfield. *Min.Ref.* Gold, *see* 4247.

Sloan Bore. *See under* Artesian Bores. No. 331.

Smart Wills and Rogers' Reef, 3 miles W. of Mt. Jacob, Bompa Goldfield. *Min.Ref.* Gold, *see* 4250.

Smart's Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4290; Iron Pyrites, 5387.

Smelting Works in Queensland—*See* Note following.

Name, Locality, &c.	Ore Treated.	Furnaces, Approx. Cap. per Day,	Remarks.
Aldershot (Maryborough)	Silver, lead, copper, gold	100 tons ...	Works dismantled.
Carrington United Mine (Charters Towers)	Copper ...	Reverberatory, 60 tons	Closed.
Carrington 1 and 2 East	Copper ...	Rev., 10 tons	Closed.
Chillagoe	Copper ...	Blast, 150 tons	Smelt for Chillagoe Co., Ores purchased.
	Silver-lead ...	Blast, 300 tons	
Klondyke	Copper ..	Blast, 50 tons	Smelt Mungana ores.
Duck Creek (Marraba, Cloncurry)	Copper ..	Blast, 80 tons	Intended for mines of The Willcocks's Cloncurry Syn., but never used.
Einasleigh Mine (Etheridge District)	Copper ...	Blast, 80 tons	Closed. Formerly smelting New Einasleigh F.H. ores.
Glassford Cr. (Boyne Valley)	Copper ...	Blast, 100 tons	Closed.
Great Australian Mine (Cloncurry)	Copper ...	Rev., 18 tons Blast, 80 tons	Closed.
Great Fitzroy Mine (Rockhampton)	Copper ...	Blast, 300 tons	Smelt ores of Fitzroy Mine.
Hampden	Copper ...	Blast, 250 tons	Smelt ores of Hampden and Duchess Mines. 100 tons blast furnace closed down.
Irvinebank	Tin	Rev., 50 tons Blast, 80 tons	Smelting for Irvinebank Co. Not working. Originally intended for reducing tin slags.
Mammoth (Cardross), Chillagoe	Copper-gold	Blast, 80 tons	Ores from own and Klondyke Mines.
Mt. Cannindah (Glad.)	Copper ...	Rev., 20 tons	Dismantled.
Mount Garnet	Copper ...	Blast, 300 tons	Closed. Partly dismantled.
Mt. Elliott (Selwyn, Cloncurry)	Copper ...	Blast, 147 tons	Smelt ores of Mt. Elliott Mine.
Mt. Hector (Boyne Valley)	Copper ...	Blast, 50 tons	Closed.
Mount Morgan	Copper-gold	Blast, 1500 tons Rev., 225 tons	Smelt ores of Mt. Morgan Mine.
Mount Molloy	Copper ...	Blast, 80 tons	Not working.
Mount Orange (Mackay)	Copper ...	Reverberatory, 15 tons	Rented to different companies from time to time.
Mount Perry	Copper, and gold	Blast, 60 tons Rev., 20 tons	Treat ores for Co.'s mines.
Norton (Gladstone) ...	Gold ...	Blast, 24 tons	Closed.
O.K. Syndicate	Copper ...	Blast, 60 tons	Closed. Treated O.K. ores.
Peak Downs (Clermont)	Copper ...	Blast, 100 tons	Closed.
Pinnacles (Ravenswood)	Copper ...	Rev., 10 tons	Smelt Pinnacle Mine ores.
Pikedale Copper Mines	Copper ...	Reverberatory, 10 tons	Closed. Treated ores from Pikedale and Commodore.
Silver Spur Mine (Texas)	Silver-lead .	Rev., 50 tons	Smelt ores of Silver Spur Mine. Ores purchased.
Société Française des Métaux Rares	Wol., Bis., & Molyb.	Blast, 100 tons Wet and mag. separation	Ores purchased.
Sundown P. C. (Stanthorpe)	Copper ...	Reverberatory, 12 tons	Closed.
The Gorge (Longara, Cloncurry)	Copper ...	Reverberatory, 8 tons	Dismantled.
United Reefs Mine (Kilkivan)	Copper ...	10 tons ...	Closed. Treated ores from United Reefs.
Warroo Mines (Stanthorpe)	Copper ...	Reverberatory, 10 tons	Closed. Partly dismantled.

Smelting Works. *Note.*—For further details concerning smelting works *see* Report on the Establishment of State Smelting Works in Queensland, by C. F. V. Jackson, State Mining Engineer. Published by Mines Department, 1909.

Smelting Works Ore-buying Tariffs. *See* Tariffs of Smelting Works.

Smith Blocks Bore. *See under* Artesian Bores. No. 274.

Smith's (J.) (Renfrew) Sub-artesian Bore. *See under* Artesian Bores. No. 293.

—— Claim, Black Ridge, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3311; Iron Pyrites, 5321.

Smith's Creek Proprietary Tin Mines, Nymbool. *Discovery:* Tin deposits discovered near the end of 1901. *Min.Ref.* Cassiterite, *see* 1142; Copper Pyrites, 2215; Zinc Blende, 8114. *See also under* Govt. Ming. Jour., Report No. 13.

GEOLOGICAL NOTE: The country rock is a grey biotite granite, the tin ore occurring irregularly as coarse grains in this rock where alteration has taken place. *See* G.S.Q. Pub. No. 192 for notes and map.

—— Gully, Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

—— Hill (Duffer Gully), "The Springs," Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3341, 3345, 3349.

—— Reef, Barmundoo (Tableland) Goldfield. *Min.Ref.* Gold, *see* 4240.

—— ——, Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2823; Gold, 3817; Iron Pyrites, 5100.

—— Secret Lode, Stanthorpe. *Min.Ref.* Cassiterite, *see* 1019.

—— Workings, Black Ridge, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3316.

Smithfield North (626) and 1 North (707) Leases, Gympie Goldfield. *Min.Ref.* Native Arsenic, *see* 102; Gold, 4483, 4484, 4485.

—— United Lease (319), Gympie Goldfield. *Min.Ref.* Actinolite, *see* 4871; Gold, 4486; Graphite, 4608.

—— 2 and 3 S. Lease (316), Gympie Goldfield. *Min.Ref.* Gold, *see* 4485A.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4529-4531.

—— ——, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3681.

Smithsonite. *Syn.* Galmei, Hemimorphite, Calamine (Dana). *Compo.*, Hyd. silicate of zinc. *Colour and Streak*, white. *Lustre*, vitreous. *H.* = 5. *Sp.gr.* = 4·30-4.45. *Contents* (*max.*), Zinc 41 per cent.

7567. ——. Harper's Mine, ½-mile E. of Calcifer Rail. Stn., 132 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.**

7568. ——. Paisley Silver Mine, Muldiva, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd (*ante*). *Ref.* G.S.M.

7569. ——. *Assoc.with* Gold, Pyragyrite, Iron Pyrites, Copper Pyrites, Cuprite, Tile Ore, Azurite, Malachite, Galena, Cerussite, Zinc Blende, Ironstone, and Calcite. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pubs. 120 (1898) and p. 191 (1904).

7570. ——. Beattie's Mine, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* **Kennedy North.** *Ref.* G.S.M.

7571. ——. *Assoc.with* Native Copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Cerussite, Linarite, Manganese-dioxide, Zinc Blende, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet, in lodes. *Loc.* Mt. Moss Lease (167), Kangaroo Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

Smoky Quartz. *See* Quartz.

Smyth's Creek, Horn Is. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3239.

Snake Cr. Bore. *See under* Artesian Bores. No. 161.

Sneakaway Gully, heading from Mt. Courtenay, Cape R. Goldfield. *Min.Ref.* Gold, *see* 3561.

Sneaker's Gully. *See* Mt. Larcombe.

Snide. A miner's term for opal of little or no value. The term is sometimes applied by sapphire miners to unsaleable corundum.

Snowdrop P.A., Mt. Langan. *Min.Ref.* Bismuth, *see* 321; Calcite, 524; Cassiterite, 1171; Cerussite, 1295; Gold, 4197; Iron Pyrites, 5337; Massicot, 6548.

Soap-making Material. Kaolin, Talc, and Tripolite when finely ground are used in the adulteration of cheap soaps. Iron, lime, zinc, mercury, and arsenic are also used in soap-making for medicinal and other purposes. All of these mineral substances are obtainable in the State.

Soap-Spur Gold Mine, Woolgar Goldfield. *Min.Ref.* Galena, *see* 2713, 2714; Gold, 3562.

Soapstone. *See* Talc, *var.* Steatite.

Soda Creek, Coolullah, Cloncurry. *Min.Ref.* Cuprite, *see* 2411A; Malachite, 6173.

——-and-acid Creek, trib. of Coen R., Coen Goldfield. *Min.Ref.* Gold (alluvial), *see* 3208.

Soda Deposits. There are no deposits in the State containing soda in commercial quantities, the natural conditions not being favourable for their formation or accumulation, although Lake Müeller, 16 miles N.E. of Aramac, is said to be a soda lake. A bore put down near the railway line at Maria Creek, 133 miles W. of Rockhampton, yields an intermittent flow of water highly charged with soda carbonate, and presents some attractions from a commercial point of view. *See under* Water Analyses, No. 66; Q.G.M.J., vol. 1, p. 2 (1900); and G.S.Q. Pub. No. 155, p. 16 (1901).

—— Water Cr., Ravenswood Goldfield. *Min.Ref.* Azurite, *see* 214A; Copper Pyrites, 2234; Malachite, 6288A.

Sodium (Na.). *Atom. Wt.* 23·0. *Sp.gr.* 0·97. *Colour,* silver-white.

Minerals: *See* Albite, Halite, Natrolite, Nepheline, and Oligoclase. Of these minerals Halite (Salt) is the only one of common occurrence.

Uses: Sodium in its metallic form is a powerful reducing agent, and, in consequence, has many industrial uses. It is employed in many chemical and metallurgical processes, and combined with mercury forms sodium amalgam—a very useful reagent in gold amalgamation. The chloride (Halite, or common salt) occurs in the lakes of the western districts, but the deposits are not utilised for any purpose, being considered too remote from railway communication. The soda water bore at Maria Creek is referred to above. *See under* Mineral Water, No. 6571, for analyses. *See also note under* Salt Manufacture.

—— chloride. *See* Halite.

—— silicates. *See under* Silicates.

Soggoath Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1117; Chlorite, 1454; Orthoclase, 7047; Serpentine, 7387; Steatite, 7687; Wolfram, 8025.

Soldier's Cap Diggings, Cloncurry. *Min.Ref.* Chalcedony, *see* 1337; Gold. 3472-3474A; Ironstone, 5491; Limonite, 5788, 5798A; Malachite, 6159A; Tile Ore, 2529B.

Somerset Co. Cook Dist. *See map,* Pl. 8.

Somersetshire Reef, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 4166; Marcasite, 6513.

Sonoma Stn., Coral Cr., 50 miles S.S.W. of Bowen. *Min.Ref.* Native Copper, *see* 2001; Prehnite, 7075.

Sorensen's Sel. (1737), 9 miles S.S.W. of Tiaro. *Min.Ref.* Coal, *see* 1829.

South Australian Mine, Durham, Etheridge Goldfield. *Min.Ref.* Malachite, *see* 6216.

South Coast of Queensland. *Min.Ref.* Cassiterite, *see* 1174; Gold, 3370; Monazite, 6881; Platinum, 7073; Silver, 7511.

—— Cross Reef, Limestone, Palmer Goldfield. *Min.Ref.* Gold, *see* 3677; Manganese-dioxide, 6403.

—— Glanmire and Monkland Lease (833). *See* Glanmire S. and Monkland.

—— Mt. Coora Lode, Black Snake Goldfield. *Min.Ref.* Copper carbonate, *see* 1964; Hematite, 4802.

—— Pine (Strathpine), 14 miles (by rail) N.byW. of Brisbane. *Min.Ref.* Gold, *see* 4220, 4221; Manganese-dioxide, 6451.

—— Peak, 1 mile N.W.byW. of Moonmera Rail. Stn. *Min.Ref.* Coal, *see* 1804.

—— Shore, Batavia R., Cape York Peninsula. *Min.Ref.* Ironstone, *see* 5535.

Southern Tin Mine, Irvinebank. *Min.Ref.* Bismuthinite, *see* 366A; Cassiterite, 871.

—— Cross Mine, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753B; Scheelite, 7342A. *See also under* Govt. Ming. Jour., Report No. 116.

—— —— Reef, Yatton Goldfield. *Min.Ref.* Calcite, *see* 515; Gold, 4178; Ironstone, 5599.

Southern Cross Opal Workings, Yowah Opal Field. *Min.Ref.* Opal (precious), *see* 6965.

—— —— Mine, Star R. (Argentine) Mineral Field. *Min.Ref.* Galena, *see* 2994; Gold, 4091; Ironstone, 5579; Lead Ochre, 5732.

—— —— Lode, Annan Tinfield. *Min.Ref.* Cassiterite, *see* 779; Tourmaline, 7827.

—— —— Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1118; Chlorite, 1455.

Southerness Bore. *See under* Artesian Bores. No. 410.

Southport, 50 miles (by rail) S.E. of Brisbane (S. Coast line). *See maps*, Pls. 6, 7. *Lat.*, 27° 57′ S.; *Long.*, 153° 27′ E. *Min.Ref.* Clay, *see* 1582; Emery, 2374; Fulgurites, 2687; Gold, 4231; Iron Pyrites, 5352; Silver, 7513. *See also* Supplementary Report List, No. 136, for further reference.

Rainfall: *See under* separate heading.

Geological Note: The country about Southport is made up of slate, shale, schist, and other old sedimentary strata, all of which are covered in places by recent alluvial deposits brought down by the Nerang River. North of Southport the old rocks are obscured by sandstone, this formation being an extension of the Mesozoic Coal Measures about the shores of Moreton Bay. The coal measures near Southport have not been tested for coal seams, but further north the same class of country has been proved to be coal-bearing.

Sovereign No. 1 Claim, Croydon Goldfield. *Min.Ref.* Gold, *see* 3494A; Hematite, 4693; Iron Pyrites, 4940.

—— Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3495; Iron Pyrites, 4942.

Spargo's Tin Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 814.

Spark's (Dot) Reef, Mt. Cook, Magnetic Island. *Min.Ref.* Gold, *see* 3997.

Specific Gravity Scale (Weight compared to water).—

Ores, Metals, and Common Substances.

0·92 Ice.
1·0 Amber.
1·2–4. Coal (bituminous).
1·7 Borax.
2·0 Chalk; Sulphur.
2·1 Opal; Salt.
2·3 Gypsum; Porcelain China.
2·5 Orthoclase.
2·6 Aluminium; Glass; Quartz.
2·7 Calcite; Granite; Marble; Talc.
2·8 Basalt.
3·0 Magnesite.
3·1 Hornblende; Tourmaline.
3·5 Topaz.
4·0 Corundum; Zinc Blende.
4·4 Barytes; Chromite.
4·7 Molybdenite.
5·0 Iron Pyrites; Hematite.
5·5 Cerargyrite (Horn Silver).
6·0 Cuprite; Scheelite.
6·5 Cerussite.
6·7 Antimony (metallic).
6·9 Cassiterite (Tin Ore).
7·0 Zinc (metallic).
7·1 Tantalite.
7·3 Tin (metallic); Wolfram.
7·5 Galena.
7·8 Iron (metallic).
8·3 Brass.
8·9 Copper (metallic).
9·3 Pitchblende.
9·8 Bismuth (metallic).
10·5 Silver (metallic).
11·3 Lead (metallic).
13·5 Mercury (Quicksilver).
14–19 Platinum.
15·6–19·5 Gold.
19·3–21·12 Iridosmine.
22·6–22·8 Iridium.

Specimen Creek, Cape R. Goldfield. *Min.Ref.* Cerussite, *see* 1230; Galena, 2948; Gold (alluvial), 3270.

—— Mine, Glen Linedale, 6 miles N.W. of Coolgarra. *Min.Ref.* Cassiterite, *see* 857.

Specular Iron. *Syn.* Hematite, *which see.*

Speculation M.C. (198), Chinaman Group, Cloncurry. *Min.Ref.* Chrysocolla, *see* 1496; Malachite, 6102; Tile Ore, 2501.

Speedwell Colliery, Yahmahnto, 5 miles S. of Ipswich. *Min.Ref.* Coal, *see* 1728C.

Spelter. *See* Zinc.

Spero Meliora Reef, Sandy Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3729A; Iron Pyrites, 5049; Zinc Blende, 8079.

Sphalerite. *Syn.* Zinc Blende, *which see.*

Sphaerosiderite. *Var. of* Siderite, *which see.*

Sphene. *Syn.* Leucoxene. *Compo.*, titanium and lime silicate. *Colour*, brown, yellow, grey, etc. *Streak*, white. *Lustre*, adamantine to resinous. *H.* = 5-5·5. *Sp.gr.* = 3·4-3·56.

7572. ——. Between Annan and Bloomfield Rivers, Annan R. Tinfield, 20 miles S. of Cooktown. *Co.* Banks; *Dist.* **Cook.**

7573. ——. In granitic rock. *Loc.* Tate R., Fisherton, 24 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

Spicer Bros. Mine, Yorkey's Goldfield. *Min.Ref.* Scheelite, *see* 7358.

Spicular Earth. *Var. of* Opal. *See* No. 7024.

Spinel. *Compo.*, Aluminate of magnesia. *Colour*, red, violet, greenish, brown, and black. *Streak*, white. *H.* = 8. *Sp.gr.* = 3·5-4·1.

MINERAL NOTE: Spinel is of uncommon occurrence in Queensland. It is found at times in the drifts containing tin, gold, and sapphires, particularly in those at Stanthorpe, Jordan Cr., and Anakie. Occasionally stones of fine colour are found which could be cut into gems, but 2-carat stones, even in the rough, are rare.

7574. ——. Ruby (*var.*). California Cr., nr. Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

7575. ——. Tate R., Fisherton, 24 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

7576. ——. Jordan Cr., Jordan Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

7577. ——. *Assoc.with* Cassiterite, Topaz, Cairngorm, Sapphire, Zircon, Garnet, Diamond, and Gold, in alluvial deposits. *Loc.* Spring Cr. and its tributaries, Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 32 (1898).

7578. ——. *Assoc.with* Diamond, yellow, green, blue, and pink Sapphire, Beryl, Zircon, *var.* Hyacinth, Garnet (red), Tourmaline, Topaz, Amethyst, Cairngorm, Rock Crystal, Cassiterite, and traces of gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot, Sugarloaf, Lode, Arbouin's, Cannon, Kettle Swamp Crs., and Severn R., Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120 (1898).

7579. ——. *Loc.* Murphy's Cr., 19 miles (by rail) E. of Toowoomba. *Co.* Cavendish; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, p. 85 (1898).

7580. ——. *Loc.* Nigger Cr., br. of Wild R., 3 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

7581. ——. *Assoc.with* Gold, Sapphire, Garnet, Zircon, Amethyst, Cairngorm, Chalcedony, Jasper, Topaz, Diamond, Rutile, Magnetite, Ilmenite, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Stn., Policeman, Tomahawk, and Central Crs., Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton. *Cos.* Clermont and Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), 172, p. 20 (1902).

7582. ——. **Almandine** (*var.*). *Colour*, violet. *Assoc.with* Gold (alluvial), Ruby, Sapphire (blue), Garnet (red), Topaz (white), and Zircon, in alluvial deposits. *Loc.* Wallace and Eldridge's Claim, Seven-mile Diggings, 7 miles S.S.E. of Nanango, 123 miles N.W.byN. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* L.C.B.

——. **Picotite** (*var.*). *Syn.* Chrome Spinel. A chrome-iron bearing spinel, of dark-greenish or yellowish-brown colour.

7583. —— ——. *Loc.* Little Wonder Mine, Cooktown. *Co.* Banks; *Dist.* Cook. *Ref.* L.B. 2, p. 625 (1891).

——. **Pleonaste** (*var.*). *Syn.* Ceylonite. An iron-magnesia spinel of black or dark-brown colour.

7584. —— ——. *Loc.* Laura Rail. Stn., Palmer Goldfield, 67 miles (by rail) W. of Cooktown. *Co.* Banks; *Dist.* Cook. *Ref.* L.B. 2, p. 535 (1890).

7585. —— ——. *Loc.* Tate R., 32 miles W. of Almaden Rail. Stn. (Chillagoe line). *Co.* Bolwarra; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

7586. —— ——. *Loc.* Henrietta Cr., Jordan Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 66 (1900), and O.R.

7587. —— ——. *Loc.* Jordan Cr., Jordan Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 66 (1900), and O.R.

7587A. —— ——. *Loc.* Bunya Mountains, 8 miles N.E. of Bell Rail. Stn. *Co.* Aubigny; *Dist.* Darling Downs. *Ref.* O.R. (1909).

7588. —— ——. *Assoc.with* Olivine, in basalt. *Loc.* Policeman Knob, Policeman Cr., 10 miles N.W.byN. of Anakie Rail. Stn. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 172, p. 7 (1902).

7589. —— ——. *Assoc.with* Spinel Ruby and other gemstones, in alluvial deposits. *Loc.* Anakie Sapphire Field, 195 miles (by rail) W. of Rockhampton. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* B.D.

7590. —— ——. In alluvial deposits. *Loc.* Mt. Britton Goldfield, 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 164, p. 16 (1901).

7591. —— ——. *Assoc.with* Zircon, in quartz. *Loc.* Crow's Nest, 34 miles (by rail) N.N.E. of Toowoomba, 135 miles (by rail) W.N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton.

7591A. —— ——. *Assoc.with* Gold, Sapphire, etc., in alluvial deposits. *Loc.* Bunker's Hill, Crow's Nest (*ante*). *Ref.* B.D.

7592. —— ——. *Assoc.with* Magnetite. *Loc.* Moogerah, Fassifern, 6 miles W.N.W. of Dugandan Rail. Stn. *Co.* Churchill; *Dist.* Moreton.

Spinifex Bore. *See under* Artesian Bores. Nos. 146, 379.

Splinter Creek. Heads at Mt. Cannindah, 25 miles S. of Gladstone, flows S. into Burnett R., 30 miles W. of Mt. Perry. *Min.Ref.* Limestone, *see* 629.

Sports Reserve Bore (Nundah). *See* Nundah Coal and Gravel Co.'s Bores *under* Coal Bores.

Spotted Calf Mine, Far Fanning. *Min.Ref.* Gold, *see* 3994; Iron Pyrites, 5229.

—— Gum Reef, Norton Goldfield. *Min.Ref.* Gold, *see* 4291.

Spreadborough's Sel. (1855), Killarney. *Min.Ref.* Coal, *see* 1637.

Spresser's (¼-mile E. of), Karrabin Rd., nr. Pine Mountain. *Min.Ref.* Limonite, *see* 5901.

Spring Bluff, 10 miles (by rail) N. of Toowoomba (Main line). *Min.Ref.* Calcite, *see* 570; Olivine, 6929B.

GEOLOGICAL NOTE: *See under* Toowoomba.

—— —— and Harlaxton (between), 5 miles N. of Toowoomba. *Min.Ref.* Calcite, *see* 569; Chabazite, 1315; Ferro-Calcite, 576; Natrolite, 6897; Saponite, 7338A.

Spring Creek, br. of Blackfellow's Cr., trib. of Lynd R. *Min.Ref.* Anglesite, *see* 15; Cassiterite, 833; Cerussite, 1189; Galena, 2738; Molybdenite, 6828; Wolfram, 7938.

—— ——, flows E. into Cloncurry R., 40 miles S.S.W. of Cloncurry. *Min.Ref.* Cassiterite, *see* 771; Limestone, 620.

—— ——, Dry R., 12 miles S.S.W. of Herberton. *Min.Ref.* Cerussite, *see* 1220A; Galena, 2857.

—— ——, Horn Is. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3239.

—— ——, Jordan Cr. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220.

—— ——, Main Range, *viâ* Jondaryan. *Min.Ref.* Basaltic Hornblende, *see* 4830A.

—— ——. Flows into Munna Cr., W.S.W. of Maryborough. *Min.Ref.* Copper, *see* 1866.

—— ——, Normanby Goldfield. *Min.Ref.* Chlorite, *see* 1461; Gold, 4140; Iron Pyrites, 5315; Ironstone, 5587; Malachite, 6325.

—— ——, 10 miles W. of Bowen. *Min.Ref.* Molybdenite, *see* 6858.

Spring Creek, trib. of Broadwater, Stanthorpe. Rises about 4½ miles W. of Glen Aplin Rail. Stn., flows N. for about 4 miles, and then E. for about 12 miles, into the Broadwater to form the Severn River, 2¾ miles W. of Stanthorpe Rail. Stn. Length, about 16 miles. *Tributaries:* Black Swamp Gully, Slattery's Gully. *Min.Ref.* Cairngorm, *see* 7177, 7178; Cassiterite, 1021-1023; Diamond, 2578; Garnet, 3119; Gold, 3248; Hyacinth, 8231-8233; Rock Crystal, 7190; Sapphire, 2350, 2351; Spinel, 7577; Topaz, 7794; Tourmaline, 7859; Zircon, 8231, 8232.

—— ——, The Springs, Clermont Goldfield. *Min.Ref.* Coal Bands, *see* 1676; Gold (alluvial), 3350.

—— —— Diggings, 10 miles N.E. of Cania Goldfield. *Min.Ref.* Garnet, *see* 3143B; Hematite, 4796.

—— —— Stn. (2 miles W.), Etheridge Goldfield. *Min.Ref.* Tripolite, *see* 7025.

—— Flat Sub-artesian Bore. *See under* Artesian Bores. No. 118.

—— Gully, Talgai Goldfield. *Min.Ref.* Gold (alluvial), *see* 3253.

—— Plain Bore. *See under* Artesian Bores. No. 132.

—— Valley Sub-artesian Bore. *See under* Artesian Bores. No. 267.

—— Waterhole Bore. *See under* Artesian Bores. No. 173.

"Springs," Cape R. Goldfield. *See under* "The Springs."

Spring's Group of Copper Mines, Cloncurry. *Includes* Spring's, Ivanhoe, Lady Northcote, Hit or Miss, Kenilworth, The Pool, Lord Byron, and other M. Leases. *Min.Ref.* Redruthite, *see* 7246A.

—— (road to the), Stanhills Tinfield. *Min.Ref.* Cassiterite, *see* 755.

—— Bore. *See under* Artesian Bores. Nos. 68, 242, 324.

—— M.L. (411), Spring's Group, Cloncurry. *Min.Ref.* Redruthite, *see* 7246A.

—— Peak M.L. (562), Cloncurry. *Min.Ref.* Chrysocolla, *see* 1505B; Copper Pyrites, 2090C; Hematite, 4685A; Hypersthene, 4876A; Redruthite, 7241B; Tile Ore, 2519A.

—— Reef, Pentland, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4058; Limonite, 5878.

Springdale Bore. *See under* Artesian Bores. No. 143.

Springfield P.C., Klondyke, Coen Goldfield. *Min.Ref.* Gold, *see* 3799.

Springrush Extd. Goldfield—

SITUATION: *See* Pls. 10, 11. The Field is about 11 miles N.N.W. of Clermont. *Co.* Clermont; *Dist.* Leichhardt.

PROCLAMATION OF FIELD: First and only one, 8th August, 1879, as follows: Commencing on Gowrie (or Spring Creek) at a point one mile and a-half above the junction of Tea-tree Creek, and bounded thence on the south-east by a line bearing south-westerly to the watershed separating Gowrie Creek from Apsley Creek; thence by said watershed westerly and northerly to the Drummond Range by that range to the watershed separating Gowrie Creek from Tea-tree Creek; by that watershed south-easterly, and by a line bearing south-west to the point of commencement.

AREA: 5,120 acres. (8 square miles).

MINERAL STATISTICS: Included in "Other Goldfields" *in statistical tables* and *diagram.* Pls. 36, 46, 46-46A, 47.

MINERAL REFERENCES: *See under* "The Springs."

GEOLOGICAL NOTE: *See under* Black Ridge.

GEOLOGICAL PUBLICATIONS: *See under* Clermont.

WARDEN: Stationed at Clermont. INSPECTOR OF MINES, at Rockhampton.

Springsure. *See maps,* Pls. 10, 11. Two hundred and six miles (by rail) W.S.W. of Rockhampton. *Lat.,* 24° 7′ S.; *Long.,* 148° 5′ E. *Discovery:* Opal in basalt discovered in 1872 by O'Brien. *Min.Ref.* Chalcedony, *see* 1351; Chert, 1412; Gold, 4172; Hornstone, 1392; Hyalite, 7015; Iron Jasper, 5645, 5654; Onyx, 1397; Opal (*precious* and *common*), 6949; Travertine, 749; Witherite, 7926.

GEOLOGICAL NOTE: The rocks in and about Springsure are made up of a number of volcanic lava flows, ranging in composition between normal basalt and augite andesite. Large quantities of hyalite and chalcedony fill cavities in both basic and acidic lavas, and common opal is occasionally to be seen. Precious opal has also been found, but the deposits are said to be exhausted. *See* G.S.Q. Pubs. Nos. 103 and 177, p. 9, for details.

Springvale (Boulia) Bore. *See under* Artesian Bores. No. 395.

Square Top Bores. *See under* Artesian Bores. Nos. 118, 240.

—— —— Mountain, 17 miles N.W. of Dalby Rail. Stn. *Min.Ref.* Hyalite, *see* 7013; Lithophyses, 1395.

Squirrel Creek, 20 miles N.byW. of Kannangur Rail. Stn. *Min.Ref.* Gold, *see* 3366B.

St. Aignan (Misima) Island, Brit. New Guinea. *Min.Ref.* Calcite, *see* 610; Copper carbonate, 1970; Copper Oxide, 2057; Copper Pyrites, 2333; Galena, 3093; Gold, 3426-3428; Iron Pyrites, 5475; Limestone, 712, 713, (Coralline) 731; Pyromorphite, 7151.

GEOLOGICAL NOTE: The rocks are schists and limestones with diorite (?) dykes. Quartz reefs occur, but only when they are small do they contain gold, and then 1 oz. to the ton is considered a good yield. Alluvial gold is found in watercourses, some of it being crystalline and some in the form of wire. The country is difficult to traverse as it is covered by dense jungle, the prospecting being confined to the S.E., S., and S.W. sides of the island. The north is very rugged, and a range in the centre of the island is 4,000 feet high.

—— Agnes Creek, Perry R., 15 miles S. of Gin Gin Rail. Stn. *Min.Ref.* Azurite, *see* 173; Gold, 3589; Iron Pyrites, 4994; Malachite, 6194, 6195; Molybdenite, 6816; Psilomelane, 7080; Turgite, 7886.

—— Alban's, near Fort Cooper. *Min.Ref.* Coal, *see* 1702A.

—— Catherine Reef, Yatton Goldfield. *Min.Ref.* Calcite, *see* 516; Felspar, 2645; Gold, 4179; Iron Pyrites, 5328; Siderite, 7418; Steatite, 7693.

—— Clair Bore. *See under* Artesian Bores. No. 174.

—— Clear's Bore. *See under* Artesian Bores. No. 388.

—— David Bore. *See under* Artesian Bores. No. 314.

—— George Bores. *See under* Artesian Bores. Nos. 47, 48, 397.

—— —— Mine, Georgetown, Etheridge Goldfield. *Min.Ref.* Copper Pyrites, *see* 2150; Gold, 3730; Iron Pyrites, 5050.

—— —— Coal Mines, Dave Cr., Little R. Coalfield. *Min.Ref.* Coal, *see* 1613.

—— —— Copper and Coal Mines, Little R. *Min.Ref.* Azurite, *see* 201A; Bornite, 419A; Cinnabar, 1544; Copper Pyrites, 2177; Hematite, 4720A; Jasper, 5640A; Limonite, 5846; Malachite, 6244A; Redruthite, 7280A.

—— —— Reef, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, Iron Pyrites, *see* 3971.

—— —— ——, Woodville, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3764.

—— —— River, 6 miles S.E.byS. of Limestone, Palmer Goldfield. *Min.Ref.* Limonite, *see* 5840; Manganese-dioxide, 6404, 6405.

—— —— Road Bore. *See under* Artesian Bores. No. 32.

—— Gothard Mine, Mt. Morgan (Crocodile) Goldfield. *Min.Ref.* Gold, *see* 4379; Iron Pyrites, 5434.

—— Helen's Cr., flows E. into ocean, 30 miles N.W. of Mackay. *Min.Ref.* Coal, *see* 1649.

—— John's (Par. of) (Por. 19), about 13 miles E. of Esk Rail. Stn. (Brisbane Valley Br.). *Min.Ref.* Copper Ore, *see* 2046.

—— —— Silver Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 53; Cerrusite, 1281; Galena, 2996; Ironstone, 5580; Minium, 6626.

St. John's Cr. Goldfield—

SITUATION: *See maps*, Pls. 4, 5. The goldfield is 16 miles S.W. of Eidsvold. *Co.* Wicklow; *Dist.* Burnett. Centre about *Lat.* 25° 30′ S.; *Long.* 150° 50′ E.

POPULATION: Under 20.

PROCLAMATION OF FIELD: First gazetted, 10th October, 1890; last alteration, 16th March, 1894, as follows:—Commencing on the right bank of Flat Creek, at a point forty-four chains west from the junction of that creek with St. John's Creek, and bounded thence on the north by Flat Creek

St. John's Cr. Goldfield—*continued:*

downwards to St. John's Creek; on the north and east by St. John's Creek downwards to the junction of Target Creek; on the south by Target Creek upwards to a point due south from the starting point; and on the west by a line bearing north to the point of commencement.

Area: 1,280 acres = 2 sq. miles.

Principal Mining Centre: Hungry Hill, *which see.*

Mineral Statistics: Gold and Antimony. *Included in* Eidsvold Returns, *in stat. tables,* Pls. 36, 46, 46A.

Mineral References: Gold (alluvial) 3198; Silver, 7441, 7442; Lead (Galena) 2732, (Massicot) 6524; Antimony (Cervantite) 1301, (Stibnite) 7609, (Valentinite) 7914. Other Minerals—Felspar, 2628; Tourmaline, 7825.

Geological Note: Granite is the prevailing rock about St. John's Creek and Hungry Hill. It is traversed by large quartz lodes carrying stibnite (antimony) and free gold.

Geological Publications: Reports, Nos. 160 (1901), 207 (1907). *See under* Geol. Surv. Pub. List for title.

Warden: Stationed at Eidsvold; Inspector of Mines, at Rockhampton.

St. Joseph River, Brit New Guinea. *Min.Ref.* Gold (alluvial), *see* 3429; Magnetite, 6067; Olivine, 6933.

—— —— United Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4307; Iron Pyrites, 5398; Ironstone, 5619.

—— Kilda Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4532.

—— —— Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 917; Mispickel, 6694.

St. Lawrence. *See maps,* Pls. 2, 3. Ninety-six miles N.W.byN. of Rockhampton. *Co.* Murchison; *Dist.* Port Curtis. *Lat.,* 22° 20′ S.; *Long.,* 149° 32′ E.

Port for the Yatton Goldfield, the Styx R. Coalfield, and the Collaroy and Carmilla Copper Workings.

Harbourage: The tides at Broadsound have an abnormal range, and ebb and flow with great velocity. Main channel has a depth of 10 ft. 6 in. at low water at the Middle Shoal. Another channel at North Point Passage is deeper, but dangerous. At Waverley Creek, now the only entrance to St. Lawrence, springs rise 18 ft. to 25 ft., neaps, 9 ft. to 17 ft., and wharves are dry at L.W.

Population: 857 (Census 1911).

Rainfall: Yearly average between 1903 and 1907 = 44·67 in. Yearly average of wet days between 1903 and 1907 is 71.

Geological Note: In the immediate vicinity of the town there are shales, conglomerates, and limestones of Gympie Formation (Permo-Carboniferous System) surrounded by a large area of recent alluvial deposits. The Styx Coal Measures belonging to the Ipswich Formation outcrop at about 9 miles to the south-east, and contain coal of good quality. *See* G.S.Q. Pub. No. 84 for details.

Geological Publications: Reports—Nos. 84 (1892), Styx River; 141 (1898), Collaroy and Carmilla. *See under* Geol. Surv. Pub. List for title.

St. Mungo Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1121; Iron Pyrites, 5142; Steatite, 7688.

—— Patrick's Gully, The Springs, Clermont Goldfield. *Min.Ref.* Gold (alluvial) *see* 3351.

—— —— Block and Extended Mines, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2913A; Gold, 3937, 3938; Iron Pyrites, 5208; Zinc Blende, 8132.

—— —— —— Lease (502), Croydon Goldfield. *Min.Ref.* Gold, *see* 3496; Graphite, 4585A.

—— —— —— Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1054.

——— ——— ———, Herberton. *Min.Ref.* Cassiterite, *see* 1122; Hornblende, 4834; Kaolin, 5688; Serpentine, 7388; Steatite, 7689; Viridite, 7919.

St. Patrick's Gold Mine, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3678.

——— ——— ——— ———, Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3667D; Mispickel, 6672A.

——— ——— ——— ———, Saw Gully, Talgai Goldfield. Discovered in 1892 on St. Patrick's Day, by Mr. Clare, senr. *Min.Ref.* Gold, *see* 3854; Iron Pyrites, 5124.

——— ——— Reef, McDonald's Flat, Clermont Goldfield. *Min.Ref.* Gold, *see* 4163.

——— ——— ———, Croydon Goldfield. *Min.Ref.* Galena, *see* 2708; Gold, 3527; Iron Pyrites, 4943; Zinc Blende, 8058.

——— ——— ———, Gympie Goldfield. *Min.Ref.* Gold, *see* 4533; Hessite, 4818.

——— ——— ———, Jessop's Hill, Palmer Goldfield. *Min.Ref.* Gold, *see* 3672.

——— ——— Day Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 918; Copper Pyrites, 2163; Felspar, 2638; Marcasite, 6505.

——— Paul's Creek, Coolullah, Cloncurry. *Min.Ref.* Copper Pyrites, *see* 2117, 2118; Tile Ore, 2540-2543.

St. Paul's Creek Group of Copper Mines, Cloncurry. *Includes* Rosetta M.L., Chance P.A., Queen Bee M.C., and others. *Min.Ref.* Copper Pyrites, *see* 2117, 2118; Limonite, 5823, 5824; Malachite, 6186, 6187; Redruthite, 7269-7271; Tile Ore, 2540, 2541.

——— Ronan's Sub-artesian Bore. *See under* Artesian Bores. No. 201.

——— Ruth Sub-artesian Bore. *See under* Artesian Bores. No. 241.

Stackpool's Lease, Sellheim Mineral Field. *Min.Ref.* Galena, *see* 3019; Minium, 6638.

Stack's Creek, ½-mile N.W. of 37¾-mile Rail. Peg (Cooktown Rail.). *Min.Ref.* Coal, *see* 1608.

——— Sub-artesian Bores. *See under* Artesian Bores. No. 49.

Stagmount Bore. *See under* Artesian Bores. Nos. 143, 396.

Stake Yards Bore. *See under* Artesian Bores. No. 413.

Stalactite. *Var. of* Calcite, *which see.*

Stalagmite. *Var. of* Calcite, *which see.*

Stamfordham Artesian Bore. *See under* Artesian Bores. No. 303.

Stanage Point. 37 miles E.N.E. of St. Lawrence. *Lat.*, 22° 9′ S.: *Long.*, 150° 3′ E. *Min.Ref.* Copper (native), *see* 2011A; Copper Pyrites, 2302; Cuprite, 2478A; Hematite, 4795; Ironstone, 5625A; Magnetite, 6051; Telluride Ore, 7703.

GEOLOGICAL NOTE: The country is made up of greenish tufts, slates, and conglomerates. The Iron Knobs to the east are composed of magnetite and some hematite, with limestone at their base. *See* G.S.Q. Pub. No. 194 for details.

Stand-by Reef, Mt. Jacob Mine, Bompa Goldfield. *Min.Ref.* Copper Pyrites, *see* 2284; Galena, 3039; Gold, 4251; Iron Pyrites, 5360; Zinc Blende, 8183.

Standard Tin Lode, Sandy Cr. Tin Mines. *Min.Ref.* Cassiterite, *see* 1151A.

Stanhills Tinfield—

SITUATION: *See maps*, Pls. 20, 21, 26. Croydon-Esmeralda Road, between 12 and 24 miles S.E. of Croydon Rail. Stn. *Co.* Esmeralda; *Dist.* Burke.

POPULATION: Included in Croydon Goldfield Returns.

MINERAL STATISTICS: Tin. *See under* Croydon *stat. tables*, Pls. 38, 46, 46A.

MINERAL REFERENCES: Gold (alluvial), 3173; Lead (Galena), 2689-2691; Copper (Azurite), 157, 158, (Copper Pyrites) 2067, 2068, (Malachite) 6089, 6090; Tin (Cassiterite), 753-770; Wolfram, 7927; Molybdenite, 6814; Zinc Blende, 8050, 8051; Iron (Pyrites), 4922; Graphite, 4571; Chlorite, 1419, 1420.

Stanhills Tinfield—*continued:*

GEOLOGICAL NOTE: A coarse-grained muscovite granite occurs throughout the district, with "Desert Sandstone" forming a flat cover to it on some of the hills and ridges. The granite contains tin lodes in association with greisen, the deposits being of great extent. The sandstones contain beds of tin-bearing gravels, while recent alluvial deposits of tin are present in nearly all the gullies. The district, beyond doubt, is very rich in tin, and although water is very scarce in all seasons, the development of these deposits must take place sooner or later. *See* G.S.Q. Pub. No. 211 for details.

GEOLOGICAL PUBLICATIONS: Report—No. 211. *See* Geol. Surv. Pub. List for title. *See also* Gov. Ming. Jour., Report—No. 89, *also* A.R.D.M. (1907), pp. 172-3.

WARDEN and INSPECTOR OF MINES: Both stationed at Croydon.

Stanley Co. Moreton Dist. *See map*, Pl. 6.

—— Coal Mine. Central Railway line. *Min.Ref.* 1689A.

—— Island, Flinders Group, N.W. of Cooktown. *Min.Ref.* Coal, *see* 1612B.

—— Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

Stannary Hills—

SITUATION: *See maps*, Pls. 8, 9, 22. Ninety-three miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Lat.*, 17° 19′ S.; *Long.*, 145° 18′ E.

POPULATION: 466 (estimated 1910).

RAILWAY BASE for tin mines at Glen Linedale, Stannary Hills, Watsonville, and Irvinebank; also for Montalbion Silver-Lead and Tin Mines.

MINERAL STATISTICS: Tin. *See under* Herberton *in stat. tables*, Pls. 38, 46, 46A.

MINERAL REFERENCES: Tin (Cassiterite), 854; Bismuth (native), 333A, (Bismutite) 386; Wolfram, 7947; Molybdenite, 6832; Pitchblende, 7068; Chalcolite, 1405; Fluorspar, 2660, 2661.

GEOLOGICAL NOTE: The principal rocks are granite, greisen, aplite, slate, and greywacke. In these rocks, associated with chlorite, there are lodes of Tin, Wolfram, Bismuth, and other minerals, the principal deposits being the tin-bearing lodes of Stannary Hills. *See* G.S.Q. Pubs. 146, 192 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 146 (1900), 192 (1904). *See* Geol. Surv. Pub. List for title.

WARDEN and INSPECTOR OF MINES: Both stationed at Herberton.

Stannine. *Syn.* Stannite, *which see.*

Stannite. *Compo.*, Sulphide of tin, copper, etc. *Colour*, steel-grey. *Streak*, blackish. *H.* = 4; *Sp.gr.* = 4·3-4·52. *Contents* (*max.*), Tin 27 per cent., Copper 29 per cent.

7593. ——. *Loc.* Bakerville Mine, 4 miles W. of Watsonville, 5 miles S.W. of Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

7594. ——. Ivanhoe Mine, Eureka Cr., nr. Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

7595. ——. *Loc.* Lass o' Gowrie Mine, Eureka Cr., 1 mile N. of Stannary Hills Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

7596. ——. ? *Assoc.with* Copper Pyrites. *Loc.* Herbertina Tin Claim, Watsonville, 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 52 (1887).

7597. ——. *Assoc.with* Cassiterite, Copper Pyrites, Cuprite, Malachite, Azurite, Iron Pyrites, Mispickel, Wolfram, Ironstone, Fluorspar, and Chlorite, in vein of coarse-grained diorite. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 26 (1883), 119, p. 15 (1897).

7598. ——. *Assoc.with* Gold, Cassiterite, Topaz, Zircon, Sapphire, Diamond, and Amethyst, in alluvial deposits. *Loc.* Broadwater and its tributaries, Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 120, p. 31 (1898).

Stansfield's Sel., Por. (98), Par. of Beaudesert, E.byN. of Beaudesert. *Min. Ref.* Coal, *see* 1779B.

Stanthorpe. Notes on Gems: *See under* Govt. Ming. Jour., Report No. 22.

Stanthorpe Mineral Field—

Situation: *See maps*, Pls. 12, 13, 30. The township of Stanthorpe is 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* Darling Downs. Centre about *Lat.* 28° 35′ S.; *Long.* 152° E.

Discoveries: Alluvial tin was discovered by Mr. Greer in 1854, on Nundubbermere Run, but in 1853 a specimen was sent to England for examination. In February, 1872, Paddock Swamp, a branch of Quart Pot Creek, to the S.E. of Stanthorpe, and Four-mile Creek, to the N.N.E. of Stanthorpe, were discovered, and were the first alluvial claims to be worked, tin also being found in Broadwater Creek in June of the same year. The first tin-mining mineral selection officially recorded was taken up on Spring Creek on the 22nd April, 1872. Diamonds were first found in Spring Creek in 1872, and in the following year also in Kettle Swamp, near Blue Mountain Creek. At the latter place a diamond-washing plant was installed in 1873 by John Moffatt and party, but the venture proved a failure, only a few diamonds being found. *See also* History of Stanthorpe Tinfields, by P. Cardew, Ann. Rep. Dept. Mines, 1887.

Population: 2,485 (census 1911).

Railway Base: The town of Stanthorpe is the railway base for the silver-lead mines at Silver Spur, Silver King, Silver Crown, Silver Queen, and Pikedale; copper mines at Texas and Sundown; tin mines around Stanthorpe; and the gold mines of the Pikedale field.

Rainfall: Yearly average between 1902 and 1907, 31·94 inches. Wet days 83.

Proclamation of Field: First (and only one), 3rd January, 1883, as follows:—Commencing at the junction of Canal Cr. with the Broadwater, and bounded thence on the north by a line bearing east to the Condamine River upwards to the confluence of Clifton Creek; thence by the range dividing the waters of Clifton Cr. from those of Dalrymple Creek north-easterly to the Main Range; on the east of the Main Range southerly to the south boundary of the Colony of Queensland; on the south-east and south-west by that boundary westerly to the confluence of the Macintyre Brook with the Macintyre or Dumaresq River; on the west by a line north to the range dividing the waters of Macintyre Brook from those falling into Weir River; thence by that range north-easterly to Mount Domville or Wilmeran; thence by a spur to the junction of Broadwater with Canal Creek, the point of commencement.

Area: Not estimated.

Leases: Mineral Leases and Applications in force 26, area 334 acres; Miners' Homesteads in force 212; area 5,925 acres; Goldmining Leases, 1; area, 20 acres (1912).

Principal Mining Centres: Goldfields—Canal Cr., Leyburn, Lucky Valley, Palgrave, Pikedale, Talgai, Silver Spur, and Thane's Creek. Other mineral fields—Broadwater Creek, Jibbinbar, Macintyre Brook, Nundubbermere, Pike's Creek, Quart Pot Creek, Red Rock Creek, Severn River, Sundown Creek, Ballandean, etc.

Mineral Statistics:

Tin,	*see stat.*	*tables*,	Pls. 38, 46, 46A.
Silver,	,,	,,	Pls. 37, 46, 46A.
Lead,	,,	,,	Pls. 38, 46, 46A.
Limestone,	,,	,,	Pls. 41, 46, 46A.
Copper,	,,	,,	Pls. 39, 46, 46A.
Ironstone,	,,	,,	Pls. 41, 46, 46A.

Statistical Note: The yield of tin to end of 1912 was (approx.) 49,431 tons; of lead (Silver Spur Mine), 1,044¾ tons; of copper (Silver Spur), 1,144¾ tons; of silver (Silver Spur), 2,061,345 oz. This is equal to 36·72 per cent. of the State's total production of tin, 2·65 per cent. of lead, 0·58 per cent. of copper, and 15·27 per cent. of silver.

Stanthorpe Mineral Field—*continued:*

MINERAL REFERENCES: Gold (alluvial) 3247-3249, (reef) 3833A; Silver (Pyrargyrite) 7114, (Silver) 7469-7477; Lead (Anglesite) 37, (Galena) 2828-2841, (Massicot) 6532, (Minium) 6593; Copper (Azurite) 203, 204, (Chrysocolla) 1521, (Copper carbonate) 1902-1906, (Copper Ore) 2034, (Copper Pyrites) 2181-2196, (Cuprite) 2444, 2446, (Malachite) 6249-6254, (Redruthite) 7283, 7284, (Tile Ore) 2551; Tin (Cassiterite) 973-1036, (Stannite) 7598; Bismuth (Native Bismuth) 342, 343, (Bismuthinite) 371, (Bismutite) 402A, 402, 403; Wolfram, 7983-8005; Molybdenite, 6846-6854, (Molybdite) 6872, 6873; Antimony (Stibnite), 7634-7638; Manganese (dioxide), 6417-6420, (Psilomelane) 7087, (Pyrolusite) 7120; Zinc Blende, 8095-8106; Iron (Hematite) 4724A, 4725, (Iron Pyrites) 5103-5119, (Magnetite) 6,000, 6001, (Mispickel) 6708-6731. Other Minerals—Amethyst, 7167, 7168; Barklyite, 2365-2365A; Beryl, 292, 293; Cairngorm, 7176-7178; Calcite, 489-491; Corundum, 2370; Diamond, 2574-2578; Garnet, 3116-3119; Hornblende, 4831; Hyacinth, 8230-8233; Jasper, 5641; Kaolin, 5683; Monazite, 6878A; Orthoclase, 7043, 7044; Prase, 1399; Rock Crystal, 7189, 7190; Ruby, 2362-2364; Sagenite, 7337; Sapphire, 2347-2352; Spinel, 7577, 7578; Topaz, 7792-7795; Tourmaline, 7858, 7859; Zircon and Hyacinth (*var.*), 8230-8233.

GEOLOGICAL PUBLICATIONS: Reports, Nos. 12 (1882), 40 (1887), 120 (1898), 191 (1904). *See under* Geol. Surv. Pub. List for title; *see also under* Govt. Ming. Jour. Reports, Nos. 21, 22. *See also* Supplementary Report List, Nos. 1, 4, 14, 88.

GEOLOGICAL NOTE: The whole of the country is made up of granite and small areas of greisen and apatite, with tin occurring in greisen and quartz lodes, and in dyke masses. The great bulk of the tin produced has, however, been taken from alluvial deposits, and not from the lodes. *See* G.S.Q. Pub. No. 120 for details.

WARDEN: Stationed at Stanthorpe. INSPECTOR OF MINES: Stationed at Gympie.

SMELTING WORKS (Warro Mines): *See under* Smelting Works in Queensland.

TIN DREDGES. (See further notes in *Brisbane Courier* of 28-6-13).

Sugarloaf No. 1 *Dredge.* (Owner, Mrs. M. Allison). Situated on the Sugarloaf Creek, a tributary of Quart Pot Creek, about 8 miles E. of Stanthorpe. Consists of an 11-inch hydraulic sluicing plant on a barge.

Lode Creek Dredge. (Lode Cr. Tin Dredging Co., Ltd.). Situated about 2½ miles from Sugarloaf, on a trib. of Sugarloaf Creek and 7 miles E. of Stanthorpe. Type of Plant similar to Sugarloaf No. 1 Dredge.

Red Hill Dredge. Situated on range dividing Queensland from New South Wales, and about 1½ miles from Lode Creek. The plant consists of two portable engines, one gravel pump, one nozzle pump, and a pump for water supply.

Dalcoath Dredge. Situated about 4 miles from Stanthorpe in the direction of Red Hill. Type of Plant similar to that at Sugarloaf.

Stanthorpe Dredge. Situated on Blue Mountain Creek, about 2½ miles N.E. of Stanthorpe. Type of Plant somewhat similar to that at Red Hill.

Horseshoe Dredge. Situated on Spring Creek, about 7 miles S.W. of Stanthorpe. Type of Plant somewhat similar to that at Red Hill.

Rover Dredge. Situated on Four-mile Creek, 4½ miles N.E. of Stanthorpe. Type of Plant somewhat similar to that at Red Hill.

Beverley Dredge. Situated close to the railway, 3½ miles S. of Stanthorpe. Type of Plant similar to that at Red Hill.

Plate 30, a map of the Stanthorpe Mineral Field, shows the position of all the abovementioned creeks.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Stanton-Harcourt Goldfield—

SITUATION: *See maps*, Pls. 4, 5. The field is about 11 miles N. of Degilbo Rail. Stn., 17 miles S.S.W. of Childers Rail. Stn., and 69 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. Centre about *Lat.* 25° 20′ S.; *Long.* 152° 15′ E. *Discovery:* In 1885.

POPULATION: Under 10.

PROCLAMATION OF FIELD: First (and only one) gazetted, 13th March, 1907, as follows:—Commencing at the south corner of portion 155, and bounded thence on the north-west by that portion bearing 34 degrees about thirty-eight chains to the north bank of Ravine Creek; on the north by that creek upwards to the south boundary of portion 155, by that boundary easterly to the eastern corner of same; on the north-east by a line bearing about 164 degrees about one hundred and forty-five chains to a road three chains wide; on the south by that road westerly about twenty-five chains to a road two chains wide; and by that road westerly and north-westerly to the point of commencement.

AREA: 2,160 acres (3⅜ sq. miles).

MINERAL STATISTICS: Gold. *Included in* "Other Goldfields," *in stat. tables*, Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: Gold (alluvial) 3193, (reef) 3621, 3622; Lead (Galena) 2726, 2727; Copper (Redruthite), 7276; Zinc Blende, 8071; Iron (Pyrites) 5005, (Limonite) 5831. Other Minerals—Ankerite, 65.

GEOLOGICAL NOTE: The country rock is slate, most of which has been covered by basic (doleritic) tuffs and flows of andesite, and all of which are intersected by dykes of trachyte. *See* G.S.Q. Pub. 168 for details.

GEOLOGICAL PUBLICATIONS: Report—No. 168 (1901). *See under* Geol. Surv. Pub. List for title.

WARDEN: Stationed at Maryborough. INSPECTOR OF MINES: Stationed at Rockhampton.

Stanwell, N.W.byW. of Rockhampton. *Lat.*, 23° 32′ S.; *Long.*, 150° 20′ E. *Min.Ref.* Calcite, *see* 543; Chalcedony, 1363; Coal, 1796, 1797; Graphite, 4605; Magnesite, 5960; *also under* Supplementary Reports, Nos. 33, 100, 104, 145.

GEOLOGICAL NOTE: The rocks about Stanwell consist of shales, sandstones, and acidic volcanic tuffs belonging to the Walloon Series (Trias-Jura). Coal seams occur in the series, but, so far, have not proved to be of workable thickness or of good quality. To the south and north are rocks of Gympie Formation (Permo-Carboniferous), the Stanwell Measures resting unconformably in a depression of these older beds.

The Stanwell basin contains an artesian water supply, the intake beds being on the high country between Stanwell and Mount Morgan. *See* G.S.Q. Pub. No. 131 for details.

—— Bore. *See under* Artesian Bores. No. 65.

—— Coal Bore (Subsidised). Sel. 5A, Sandy Creek. Southerly from Stanwell Rail. Stn. *Record:* Shales and sandstones throughout, with coal bands in several places. No workable seam of coal discovered. Dept, 818 feet, bottom being in a grey volcanic ash similar to that at Mt. Hay and Stewart's Cr. *Ref.* B.D. (1913).

—— —— ——. *See also* Bushley Bore; Mt. Morgan Co.'s Bores (Stony Cr.); Petersen's Bore (Quarry Cr.); Quarry Creek Syndicate's Bore; Sanderson's (Stony Creek) Bore; Woodend Coal Bore; Warren Coal Bore; *all under* Coal Bores.

Stanwell Goldfield—

SITUATION: *See maps.* Pls. 2, 3. Sixteen miles (by rail) S.W.byS. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. Centre about *Lat.* 23° 32′ S.; *Long.* 150° 20′ E.

POPULATION: Under 20.

PROCLAMATION OF FIELD: First (and only one) gazetted, 5th September, 1889, as follows:—Commencing on the left bank of Neerkol Creek at a point bearing east from the north-east corner of portion 208, parish of Playfair, and bounded thence on the south by a line bearing west four and a-half miles, crossing Black Mountain Range; on the west by a line bearing north four miles; on the north by a line bearing east eight miles; on the east by a line bearing south three and a-half miles, again on the south by a line bearing west to the north corner of a reserve on Neerkol Creek, by the north-west and south-west boundaries of that reserve to Neerkol Creek; and thence by that upwards to the point of commencement.

Stanwell Goldfield—*continued:*

Area: 19,520 acres (30½ sq. miles).

Mineral Statistics: Gold. *Included in* "Other Goldfields," *in stat. tables,* Pls. 36, 46, 46a, 47.

Mineral References: Gold, *see* 4342-4344; Iron Pyrites, 5408.

Geological Publications: *Nil.*

Warden and Inspector of Mines: Both stationed at Rockhampton.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— Quarry, E. of Stanwell. *Min.Ref.* Graphite, *see* 4605; Hematite, 4792, 4793.

Star Mine (1), Montalbion. *Min.Ref.* Galena, *see* 2771; Silver, 7454.

—— Reef, Pikedale Goldfield. *Min.Ref.* Gold. *see* 3839.

Star River. Heads at Main Coast Range, 30 miles W. of Townsville, flows south-westerly for 40 miles to fall into the Burdekin River about 60 miles W.S.W. of Townsville. *Tributary,* Big River. *Min.Ref.* Cassiterite, *see* 1165, 1166; Copper Ore, 2038; Garnet, 3131; Tile Ore, 2566.

—— —— Copper Mines, head of Big R., br. of Great Star R. *Min.Ref.* Copper (ores), *see* 2038.

—— and Stripes Tin Mine, Emu Cr., 12 miles S.E.byE. of Petford Rail. Stn. (Chillagoe line). *Min.Ref.* Cassiterite, *see* 936.

—— of the East Mine, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3837.

—— of Hope Reef. Copperfield, Clermont Goldfield. *Min.Ref.* Gold, *see* 4161; Iron Pyrites, 5325; Mispickel, 6770.

—— —— ——, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

—— —— ——, Normanby Goldfield. *Min.Ref.* Copper Pyrites, *see* 2261; Gold, 4134; Iron Pyrites, 5309.

—— of the South Mine, Herberton. *Min.Ref.* Graphite, *see* 4596.

—— —— ——, Irvinebank. *Min.Ref.* Cassiterite, *see* 872.

—— —— ——, Connolly Cr., Burdekin R., Ravenswood Goldfield. *Min.Ref.* Cerussite, *see* 1229; Galena, 2944; Gold, 4040; Iron Pyrites, 5255.

—— —— —— Reef, Palmer Goldfield. *Min.Ref.* Gold, *see* 3686.

Star River (Argentine) Mineral Field—

Situation: *See maps,* Pls. 16, 17. Fifty miles (by coach) N.W. of Ravenswood Junction, 104 miles (by rail and road) W.S.W. of Townsville. *Cos.* Elphinstone and Wilkie Gray; *Dist.* Kennedy North. Centre about *Lat.* 19° 25′ S.; *Long.* 146° 15′ E.

Discovery: 1881.

Population: (Included in Ravenswood Returns.)

Proclamation of Field: First gazetted, 7th February, 1883; last alteration, 31st May, 1893, as follows:—Commencing on the north bank of the Burdekin River where it passes through the Gorge in the Coast Range, and bounded thence by a line north to said range; thence following that range, being the eastern watershed of the Burdekin River, northerly to a point south from the south-west corner of portion 594, parish of Halifax, situated on Bluewater Creek; thence by a line north about eight miles to that corner; thence by a line north-west to the south-west corner of portion 474 on Clerks Creek, by Clerks Creek downwards about one mile and a-quarter to the south corner of a reserve; thence by a line north-west to the south-west corner of portion 478; thence by the south-west boundary of Cairo Lease north-westerly and northerly to the trial survey of the railway from Townsville to Ingham, by that survey westerly to the east boundary of portion 474, parish of Waterview, by the east and south boundaries of that portion to the south-west corner; thence by a line south to the range, by that range to the junction of Coane Range or the southern watershed of the Running River and its tributaries, by the Coane Range westerly to the Burdekin River at the confluence of that river with Running River, and by the Burdekin River downwards southerly to the point of commencement;—exclusive of the Ravenswood Gold Field.

Leases: Mineral Leases and Applications in force, 4; area, 45 acres.

Area: 1,373,440 acres (2,146 sq. miles).

Star River (Argentine) Mineral Field—*continued:*

MINERAL STATISTICS:

Silver,	*see stat.*	*tables,*	Pls. 37, 46, 46A.
Lead,	,,	,,	Pls. 38, 46, 46A.
Wolfram,	,,	,,	Pls. 42, 46, 46A.
Bismuth,	,,	,,	Pls. 40, 46, 46A.
Molybdenite,	,,	,,	Pls. 42, 46, 46A.

MINERAL REFERENCES: Gold (reef), 4087-4094; Silver (Cerargyrite), 1184, (Silver) 7491-7493, (Silver, native) 7558; Lead (Anglesite), 44-59, (Cerussite) 1259-1285, (Galena) 2981-3002, (Lead Gossan) 5729, (Lead Ochre) 5730-5732, (Linarite) 5940, (Massicot) 6539-6543, (Matlockite) 6550, (Minium) 6603-6631, (Pyromorphite) 7148; Copper (Azurite), 224, 225, (Copper Pyrites) 2250, (Malachite) 6311-6314, (Tenorite) 7732; Bismuth (native), 348; Antimony (Stibnite), 7648; Manganese (dioxide), 6445, (Pyrolusite) 7125; Zinc Blende, 8163-8165; Iron (Hematite), 4753-4755, (Iron Ochre) 4915, 4916, (Iron Pyrites) 5282-5288, (Ironstone) 5568-5582, (Mispickel) 6756-6758, (Siderite) 7410, 7411. Other Minerals: Barytes, 275; Topaz, 7805; Tourmaline, 7862.

GEOLOGICAL NOTE: The country rocks are granite, gneiss, schist, slate, sandstone, grit, and conglomerate, the three latter belonging to the Star Formation (Permo-Carboniferous), and resting unconformably on the granite and slate. On the surface the lodes are of ironstone gossan, quartz, and lead oxides, with galena and mispickel some distance below, all carrying varying amounts of silver. *See* G.S.Q. Pub. No. 26 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 26 (1886), 48 (1888). *See under* Geol. Surv. Pub. List for title. *See also* List of Maps *under* Department of Mines Publications.

WARDEN: Stationed at Ravenswood. INSPECTOR OF MINES: Stationed at Charters Towers.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Starcke Nos. 1 and 2 Goldfields—

SITUATION: *See maps,* Pls. 8, 9. The goldfields are situated about 40 miles N.N.W. of Cooktown. *Cos.* Melville and Banks; *Dist.* Cook.

DISCOVERY: In 1890 by Messrs. Cairns and Bowden.

POPULATION: Less than 20.

PROCLAMATION OF FIELDS: Starcke No. 1, first (and only one) gazetted, 22nd February, 1895, as follows:—Commencing at a point on the Starcke River 12 miles upwards from its mouth, and bounded thence on the north by a line west about nine miles to the western watershed of the Starcke River; by that watershed southerly and easterly to the western watershed of the Morgan and McIvor Rivers; by that watershed southerly to the southern watershed of the McIvor River; by that watershed easterly to the south-eastern watershed of Cocoa Creek; and by that watershed to its confluence with the McIvor River; thence by a line north to the eastern watershed of the Starcke River; by the north-eastern watershed of that river north-westerly to the point of commencement.

Starcke No. 2, first (and only one) gazetted, 1st September, 1898, as follows:—Commencing at the mouth of the Starcke River, and bounded thence by that river upward about 12 miles; thence by a range forming the north-eastern watershed of the Starcke River, south-easterly to a point north from the confluence of Cocoa Creek with McIvor River, and west from the north-west corner of portion 189; thence by a line bearing east passing along portions 189 and 202 to the eastern boundary of the parish of Tupia; thence by that eastern boundary northerly to the shore of the Pacific Ocean, and by the shore westerly to the point of commencement.

AREA: Starcke No. 1, 96,640 acres (151 sq. miles); Starcke No. 2, 97,200 acres (155 sq. miles).

LEASES: Gold-mining leases and applications in force, 4; area, 55 acres. Miners' homestead leases in force, nil (1912).

Starcke Nos. 1 and 2 Goldfields—*continued:*

PRINCIPAL MINING CENTRES: Cocoa Creek and Munburra, *which see.*

MINERAL STATISTICS: Gold, *included in* "Other Goldfields" *in stat. tables and diagram,* Pls. 36, 46-46A, 47. Antimony, *see under* Cooktown, *stat. tables,* Pls. 40, 46-46A.

MINERAL REFERENCES: Gold (alluvial), *see* 3200A, 3200B, 3201, (reef) 3662-3667G; Silver, 7447, 7448; Antimony (Cervantite) 1302-1304, (Stibnite) 7613-7615, 7617; Iron (Iron Pyrites) 5026, 5026A, (Mispickel) 6672, 6672A.

GEOLOGICAL NOTE: The Munburra reefs on Starcke No. 2 Goldfield occur in altered sedimentary rocks, made up of slates, quartz-schists, and quartzites. The rocks at Cocoa Creek, on Starcke No. 1, are slates and quartzites, the reefs carrying both gold and antimony. *See* G.S.Q. Pubs. 91 and 209 for details.

GEOLOGICAL PUBLICATIONS: Reports—Nos. 91 (1893), 209 (1907), and 223 (1909). *See under* Geol. Surv. Pub. List. for title.

WARDEN: Stationed at Cooktown. INSPECTOR OF MINES: Stationed at Croydon.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Starcke Consols Lease (23), Munburra, Starcke Goldfield. *Min.Ref.* Gold, *see* 3667E.

—— River (head of East branch of), 22 miles N.W. of Cooktown. *Min.Ref.* Gold (alluvial), *see* 3202.

Starlight Gully, Munburra, Starcke Goldfield. *Min.Ref.* Gold (alluvial), *see* 3200A.

—— Mine, Ulam Goldfield. *Min.Ref.* Gold, *see* 4298.

State-owned Batteries in the vicinity of Charters Towers. *See under* Govt. Ming. Jour., Report No. 61.

State's Mineral Production. *See* Table *under* Mineral Statistics.

Statistics. (*See* additional notes under Mineral Headings.)—

Antimony,	*see tables,*	Pls.	40, 45, 46, 46A,	*and diagram,*	Pl.	52.
Bismuth,	,,	,,	40, 45, 46, 46A,	,,	,,	52.
Coal,	,,	,,	43, 45, 46, 46A,	,,	,,	55.
Copper,	,,	,,	39, 45, 46, 46A,	,,	,,	51.
Gems,	,,	,,	44, 45, 46, 46A,	,,	,,	56.
Gold,	,,	,,	36, 45, 46, 46A,	,,	,,	47.
Graphite,	,,	,,	41, 45, 46, 46A,	,,	,,	53.
Ironstone,	,,	,,	41, 45, 46, 46A,	,,	,,	53.
Lead,	,,	,,	38, 45, 46, 46A,	,,	,,	49.
Limestone,	,,	,,	36, 45, 46, 46A,	,,	,,	53.
Manganese,	,,	,,	40, 45, 46, 46A,	,,	,,	53.
Molybdenite,	,,	,,	42, 45, 46, 46A,	,,	,,	54.
Opal,	,,	,,	44, 45, 46, 46A,	,,	,,	56.
Sapphire,	,,	,,	44, 45, 46, 46A,	,,	,,	56.
Scheelite,	,,	,,	42, 45, 46, 46A,	,,	,,	54.
Silver,	,,	,,	37, 45, 46, 46A,	,,	,,	48.
Tin,	,,	,,	38, 45, 46, 46A,	,,	,,	50.
Wolfram,	,,	,,	42, 45, 46, 46A,	,,	,,	54.

Customs Gold Returns (Rockhampton). *See under* Rockhampton.

Crushing Mills (Gold and Tin). *See under* Gold, Tin.

Mining Machinery (Value of). *See* separate heading.

Miners' Rights. *See* separate heading.

Miners' Wages (Average on each Field). *See under* Wages.

State's Mineral Production (Table). *See under* Mineral Production.

See also notes under Mineral Statistics.

Staurolite. *Syn.* Staurotide. *Compo.*, Silicate of alumina and iron. *Colour*, brownish, yellowish. *Streak*, whitish, greyish. *H.* = 7-7·5; *Sp.gr.* = 3·65-3·75.

7599. ——. *Assoc.with* Garnet, in mica schist. *Loc.* Cattle Cr., Corella, about 38 miles W.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, Pt. 1, p. 18 (1908), and G.S.M.

7600. ——. In mica schist. *Loc.* Chillagoe Mines, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

7601. ——. *Assoc.with* Garnet, in mica schist. *Loc.* Grey Ranges, near border of New South Wales, S. Western Queensland. *Dist.* Gregory South and Warrego. *Ref.* G.S.M.

Staurotide. *Syn.* Staurolite, *which see.*

Steatite. *Syn.* French Chalk, *var of* Talc, *which see.*

Steel-making Materials—

Iron. *See* Hematite, Limonite, Clay Ironstone, etc., and notes under Iron.

Manganese. *See* Pyrolusite, Psilomelane, Manganite, "Manganese-dioxide," and notes under Manganese.

Chromium. *See* Chromite, and notes under Chromium.

Nickel. *See* notes under Nickel.

Tungsten. *See* Wolfram, Scheelite, and notes under Tungsten.

Molybdenum. *See* Molybdenite, Molybdite, and notes under Molybdenite.

Titanium. *See* Rutile and Ilmenite, and notes under Titanium.

Aluminium. *See* Beauxite, and notes under Aluminium.

Coal. *See* Geological and Mineral Notes under Coal.

Fluxes. *See* Limestone, Fluorspar, and notes under Limestone.

Furnace linings. *See* Kaolin, "Fireclay," Magnesite, Tripolite, Chromite, Beauxite, Talc.

Literature. (1) Federal Iron Bonus Commission. Report on Queensland's Resources. G.S.Q. Pub. No. 190. (2) Iron, Manganese, and Limestone in Central and Southern Districts. G.S.Q. Pub. No. 194. (3) Coal: Ipswich, G.S.Q. Pubs. Nos. 147 and 204; Burrum, G.S.Q. Pub. No. 170; Dawson-Mackenzie Rivers, G.S.Q. Pubs. Nos. 155 and 200; Clermont, G.S.Q. Pubs. Nos. 27 and 48; Styx River, G.S.Q. Pub. No. 84; Callide Creek, G.S.Q. Pubs. Nos. 80 and 87; Cooktown, G.S.Q. Pubs. Nos. 180 and 222.

Steele's Sel. (31), Jibbinbar. *Min.Ref.* Gold, *see* 3833A; Mispickel, 6716; Zinc Blende, 8097.

—— Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

Steinhardt's Sel., in Por. (2T), Par. of Telemon, S.E. of Beaudesert. *Min.Ref.* Coal, *see* 1782C.

Stenhouse Bore. *See under* Artesian Bores. No. 382.

—— Mine, Newellton. *Min.Ref.* Cassiterite, *see* 1140; Chlorite, 1456; Fluorspar, 2679.

Stephanite. *Compo.*, Sulphide of silver and antimony. *Colour and Streak*, iron-black. Metallic. *H.* = 2-2·5; *Sp.gr.* = 6·2-6·3. *Contents* (*max.*), Silver 68 per cent.

7602. ——. Muldiva, 8 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 50 (1900).

7603. ——. *Loc.* Block on King's Silver Mine, One Mile, Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

Stephen's Extd. Tin Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1053.

Steven's Copper Lode, Cania Goldfield. *Min.Ref.* Azurite, *see* 252; Copper Pyrites, 2305; Cuprite, 2479; Iron Pyrites, 5413.

Stewart's Bore. *See under* Artesian Bores. No. 3.

Stewart's Creek, 6 miles S. of Townsville, on Gt. Northern line. *Discovery:* Coal discovered here in January, 1887. Railway Base for Stewart's Creek Coal Measures. *Min.Ref.* Coal, *see* 1642A. *See also under* Govt. Mining Jour., Report No. 66, and *under* Coal Bores.

GEOLOGICAL NOTE: The rocks comprise Coal Measures belonging to the Upper Bowen Formation (Permo-Carboniferous) and acidic volcanic rocks, the latter being intrusive. *See* G.S.Q. Pubs. 92, p. 172, and 196 for details.

—— ——, trib. of Neerkool Cr., W.N.W. of Stanwell. *Min.Ref.* Calcite, *see* 541; Epidote, 2604; Hematite, 4793; Hornblende, 4846; Jasper, 5648; Limonite, 5913; Lydianstone, 5658; Magnesite, 5961; Olivine, 6931.

—— ——. Flows into Stoney Cr., 24 miles S.W. of Rockhampton. *Min.Ref.* Chalcedony, *see* 1363.

Stewart's T. Claim, Watsonville. *Min.Ref.* Azurite, *see* 192A; Cassiterite, 915; Chalcanthite, 1324; Chlorite, 1439; Copper Pyrites, 2161, 2162; Cuprite, 2430; Fluorspar, 2662; Iron Pyrites, 5067; Ironstone, 5526; Malachite, 6224; Mispickel, 6693; Stannite, 7597; Wolfram, 7953.

Stewart and Spier's Mine, between Retreat and Ruby Crs., Mt. Clifford. *Min.Ref.* Gold, *see* 4169; Hematite, 4767; Limonite, 5892.

Stibbard (A. F.) Bore. *See under* Artesian Bores. No. 155.

Stibnite, *Syn.* Antimony glance. *Compo.*, Sulphide of antimony. *Colour and Streak*, lead-grey. *H.* = 2; *Sp.gr.* = 4·52-4·62. *Contents* (*max.*), Antimony 71 per cent.

7604. ——. *Assoc.with* Cuprite, Tetrahedrite, and Malachite, in quartz. *Loc.* Rainbow M.F. (2454) (Boomerang Group), Cone Cr., 2½ miles N.byE. of Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pubs. 10, p. 5 (1885), 215, p. 102 (1908).

7605. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Galena. *Loc.* Lady Norman and Reid Cr. Mines, 4½ miles S.W. of Mt. Perry Rail. Stn. *Co.* Bowen; *Dist.* **Burnett.** *Contents:* Gold = 2·25 oz. to 5·05 oz. per ton. *Ref.* A.R. D.M. (1894), p. 34.

7606. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Mispickel, and Zinc Blende. *Loc.* Reid Cr. Gold Reefs, 4½ miles S.W. of Mt. Perry, 71 miles (by rail and road) S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885), and A.R. D.M. (1894), p. 34.

7607. ——. Stuart R., 24 miles S.W. of Kingaroy Rail. Stn. (Kilkivan line). *Co.* Fitzroy; *Dist.* Burnett. *Ref.* P.R.S.Q., vol. 4, p. 45 (1887).

7608. ——. In quartz lode. *Loc.* Pontin's Mine, **Hungry Hill,** St. John's Cr. Goldfield, 16 miles S.W. of Eidsvold. *Pors.* 695, 903, 904, 957, 958, 2192. *Pars.* Dykehead and Narayen. *Co.* Wicklow; *Dist.* Burnett. *Analyses:* Antimony = 60·10 and 63·33, Silica = 12·60 and 11·79 per cent.; Gold = 1 dwt. 4 gr. and trace; Silver = 15 dwt. and 11 dwt. per ton. *Ref.* G.S.Q. Pub. 160, p. 15 (1901); A.R., pp. 72 and 109 (1906, 1907).

7609. ——. *Assoc.with* Cervantite and Valentinite. *Loc.* St. John's Cr. Goldfield (*ante*). Ref. P.R.S.Q., vol. 4, p. 45 (1887), and G.S.M. (same as 7608).

7610. ——. Crown No. 1 South Mine (20 ft. level), Eidsvold Goldfield, Burnett R., 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 125, p. 35 (1897).

7611. ——. *Assoc.with* Gold, Cuprite, and Hematite, in quartz reef. *Loc.* Lady Augusta Mine, Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 102, p. 4 (1895), and 160, pp. 6-11 (1907).

7612. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Reef in Stockman Mine, Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 43, p. 4 (1887).

7613. ——. *Assoc.with* Gold, in quartz reef. *Loc.* First Call P.C., **Cocoa Cr.,** trib. of McIvor R., 33 miles N.N.W. of Cooktown. *Co.* Banks; *Dist.* **Cook.** *Assays:* (1) Gold = 12 oz. 15 dwt. 21 gr. per ton, Antimony = 75 per cent.; (2) Gold = 11 oz. 12 dwt. per ton, Antimony = 65 per cent. *Ref.* G.S.Q. Pubs. 91, p. 4 (1893), and 209, p. 7 (1907), and 223, pp. 23, 24 (1909).

7614. ——. *Assoc.with* Gold. *Loc.* First Call 1 S.E. Mine, Cocoa Creek (*ante*). *Ref.* G.S.Q. Pubs. 91, p. 4 (1893); 94, p. 10 (1893); 209, p. 7 (1907); and 223, pp. 23, 24 (1909).

7615. ——. *Assoc.with* Gold, in alluvial deposits. *Loc.* Cocoa Cr., trib. of McIvor R. (*ante*). *Yield:* Gold = 4 oz. 14 dwt. per ton. *Ref.* G.S.Q. Pub. 91, p. 3 (1893).

7616. ——. Laura Rail. Stn., Palmer Goldfield, 67 miles (by rail) W. of Cooktown. *Co.* Banks; *Dist.* Cook. *Ref.* L.B. 2, p. 539 (1890).

7617. ——. *Assoc.with* Cervantite and Gold. *Loc.* Starcke River, 22 miles N.W. of Cooktown. *Co.* Banks (*ante*). *Ref.* G.S.Q. Pub. 125, p. 31 (1897), and G.S.M.

7618. ——. *Assoc.with* Gold, Cervantite, and Iron Pyrites, in quartz. *Loc.* Craig's Antimony Lease, Emily Reef, **Northcote,** 12 miles E.byS. of Thoruborough, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pubs. 16 (1885), and 125, p. 48 (1897).

7619. ——. *Assoc.with* Gold, Iron Pyrites, and Cervantite, in quartz reef. *Loc.* Emily Antimony Lease, Northcote, Hodgkinson Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 16 (116), p. 31 (1884), and 125, p. 48 (1897).

7620. ——. Jacobsen's Mine, Northcote, Hodgkinson Goldfield (*ante*). *Assay:* Antimony = 61·60 per cent., Gold = 19 gr., and Silver = 3 dwt. per ton. *Ref.* A.R., p. 110 (1907).

7621. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Matilda (Pyles') Mine, Emily Reef, Northcote, Hodgkinson Goldfield (*ante*). *Ref.* G.S.Q. Pub. 16 (116), p. 31 (1884).

7622. ——. *Assoc.with* Gold, in quartz reef. Minnie Moxham Mine, Northcote, Hodgkinson Goldfield (*ante*). *Yield:* Gold = 2 oz. per ton. *Ref.* G.S.Q. Pub. 16 (116), p. 31 (1884), and P.R.S.Q., vol. 4, p. 45 (1877).

7623. —— (traces). *Assoc.with* Gold, in quartz. *Loc.* Mark Twain Reef, 2 miles N. of Thornborough, Hodgkinson Goldfield, 19 miles (by coach) N.N.W. of Dimbullah Rail. Stn. (Chillagoe line). *Co.* Hodgkinson; *Dist.* Cook.

7624. ——. *Assoc.with* Gold. *Loc.* Thornborough, Hodgkinson Goldfield (*ante*). *Assay:* Gold = 2 oz. 11 dwt. 14 gr. per ton; Antimony = 69·8 per cent. *Ref.* A.R., p. 92 (1907).

7625. ——. *Assoc.with* Gold. *Loc.* Home Rule Mine, Woodville, 9 miles N.W.byW. of Thornborough, Hodgkinson Goldfield (*ante*). *Ref.* G.S.Q. Pub. 16, p. 23 (1885).

7625A. ——. Jackson's Antimony Mine, Woodville (*ante*). *Ref.* A.R.D.M., 1909, p. 174.

7626. ——. Nil Desperandum Mine, Woodville (*ante*). *Ref.* G.S.Q. Pub. 16, p. 26 (1885).

7627. ——. Albion Mine, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 55 (1900).

7627A. ——. *Assoc.with* Galena, Argentite, and Silver. *Loc.* Cumnor Silver Lease, Silverfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 46 (1897).

7628. ——. *Assoc.with* Galena. *Loc.* Victoria Mine, Silverfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 45 (1887).

7629. ——. *Assoc.with* Cervantite. *Loc.* Nil Desperandum Mine, Watsonville, head of James Cr., 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.M.

7630. ——. *Loc.* Walsh R., Watsonville (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 56 (1900).

7631. ——. In a vein 1 ft. thick. *Loc.* Admiral Sampson Mine, Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D. and G.S.M.

7632. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in quartz reef. *Loc.* Queen Constance 5 North Mine, Mareeba Goldfield, 5 miles S.E. of Mareeba Rail. Stn. (Cairns line). *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 97, p. 6 (1894).

7633. ——. North Queensland Concession, Mitchell River. *Dist.* Cook.

7634. ——. *Loc.* Lode Creek, nr. Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* B.D.

7635. ——. *Assoc.with* Cassiterite and Gold, in alluvial deposits, close to quartz veins. *Loc.* Head of 13-Mile Cr., trib. of Pike's Cr., Pikedale, about 10 miles W.N.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

7636. ——. A surface outcrop. *Loc.* Maidenhead Stn., 52 miles (by rail and road) S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* B.D.

7637. Stibnite. *Assoc.with* Cervanite. *Loc.* Silver Spur Mine, nr. Texas, 43 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Assays:* Antimony = 80·2 and 39·9 per cent., Gold = 4 dwt. 9 gr., and Silver = 9 dwt. 13 gr. and 4 dwt. 19 gr. per ton. *Ref.* A.R., p. 68 (1906).

7638. ——. In lode. *Loc.* Grazing Farm Reserve, Strathpine, 4 miles S. of Silver Spur, 47 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*).

7638A. —— (massive). *Loc.* 5 miles from Silver Spur Mine, 48 miles W.S.W. of Stanthorpe. *Co.* Clive (*ante*). *Ref.* A.R., p. 196 (1909).

7639. ——. *Assoc.with* Wolfram. *Loc.* Birthday Mine, Dry R., br. of Wild R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell. *Dist.* **Kennedy North.** *Ref.* B.D.

7640. ——. In quartz. *Loc.* Junction of Wild and Dry Rivers, 13 miles S.S.W. of Herberton (*ante*). *Ref.* B.D.

7641. ——. Rishton, 18 miles E.byS. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.M.

7642. ——. *Assoc.with* Galena and Zinc Blende. *Loc.* Hannon's Silver Mine, 1 mile N. of Ravenswood, Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

7643. ——. *Assoc.with* Silver, Galena, Iron Pyrites, Copper Pyrites, and Zinc Blende, in lode. *Loc.* King's Silver Lode, 1 mile N. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Assay: See* No. 2227. *Ref.* G.S.Q. Pub. 152, p. 11 (1900).

7644. ——. White and Phillip's Mine, Ravenswood Goldfield (*ante*). *Ref.* G.S.M.

7645. ——. Four miles E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 45 (1887).

7646. ——. *Assoc.with* Cervantite, in silicified slate. *Loc.* Homestead Prov. Goldfield, 46 miles (by rail) W.S.W. of Charters Towers. *Co.* Griffith; *Dist.* Kennedy North.

7647. ——. *Assoc.with* Cervantite. *Loc.* 3 miles W. of Homestead Rail. Stn., 49 miles (by rail and road) W.S.W. of Charters Towers. *Co.* Griffith (*ante*). *Assays:* (1) Gold = trace, Silver = 13 dwt. 13 gr. per ton, Antimony = 45·5 per cent.; (2) Gold = trace, Silver = 9 dwt. 13 gr. per ton, Antimony = 36·85 per cent. *Ref.* A.R., p. 67 (1906).

7648. ——. *Assoc.with* Zinc Blende, Galena, and Iron Pyrites, in lode. *Loc.* Murphy and Godson's M.L. (73), Star R. Mineral Field, 50 miles (by coach) N.W. of Ravenswood Junction. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Assay:* Lead = 52½ per cent., Silver = 81½ oz. per ton. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

7649. ——. 4-Mile Creek, North Pine, 17 miles (by rail) N. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* G.S.M.

7650. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Advance Reef, Norton Goldfield, 33 miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Assay:* Gold = 11 dwt., Silver = 2 oz. 15 dwt. per ton. *Ref.* G.S.Q. Pub. 21, p. 6 (1885).

7651. ——. *Assoc.with* Tetradymite. *Loc.* Struck Oil Mine, Mt. Morgan Goldfield, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.M.

7652. ——. *Assoc.with* Cervantite, in quartz lode 18 in. thick. *Loc.* 7 miles from Aramara Rail. Stn. (Gayndah line), 39 miles (by rail and road) W. of Maryborough. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* B.D.

7653. ——. *Assoc.with* Gold, Silver, Redruthite, Copper Pyrites, Pyrrhotite, Galena, and Mispickel. *Loc.* Mariner's Reef, Black Snake Goldfield, 10 miles S.byN. of Kilkivan. *Co.* Lennox; *Dist.* Wide Bay. *Assay:* Silver = 23 oz., Gold = 1 oz. 2 dwt. per ton. *Ref.* G.S.Q. Pub. 28, p. 6 (1886).

7654. ——. *Assoc.with* Gold. *Loc.* Mt. Rose, Glenbar Stn., 20 miles W. of Tiaro Rail. Stn. (Gympie-Maryborough line). *Co.* Lennox; *Dist.* Wide Bay. *Ref.* L.C.B.

7655. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* Triad Lease, Yorkey's Prov. Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 179, p. 7 (1902).

7656. ——. *Assoc.with* Gold, Cervantite, Iron Pyrites, etc. *Loc.* Yorkey's Surprise and Zealandia G.M. Leases, Yorkey's Prov. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 179, p. 5 (1902).

7657. ——. *Assoc.with* Cervantite and traces of Gold, in calcite lode. *Loc.* Gympie Antimony Mine, nr. Sel. 3482, Chatsworth Scrub, 7 miles N.W. of Gympie. *Co.* March; *Dist.* Wide Bay. *Yield:* Few tons. *Ref.* B.D.

7658. ——. *Assoc.with* Calcite. *Loc.* "Two-mile," Gympie Goldfield, 108 miles (by rail) N.byW. of Brisbane (North Coast line). *Co.* March (*ante*). *Ref.* B.D.

7659. ——. In calcite and quartz. *Loc.* Good Luck Mine, 5 miles N. of Gympie. *Co.* March (*ante*). *Ref.* G.S.M. and A.R.D.M., 1903, p. 179.

7660. ——. *Assoc.with* Cervantite. *Loc.* Neerdie Antimony Mines, **Neerdie,** 14 miles N.byE. of Gympie. *Co.* March (*ante*). *Assays:* (1) Antimony Oxide = 67 per cent.; (2) Antimony Sulphide = 65 per cent. *Ref.* G.S.Q. Pubs. 52, p. 6 (1890), and 125, p. 54 (1897).

7661. ——. In limestone. *Loc.* Old Timber Reserve, 5 miles N.W. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 52, p. 8 (1889).

Stilbite. *Compo.*, Hyd. silicate of alumina and lime. *Colour*, usually white. A zeolite. *Lustre*, vitreous, on cleavage surfaces; pearly. *H.* = 3·5-4. *Sp.gr.* = 2·09-2·20.

7662. —— (or Heulandite). In quartz vein. *Loc.* Plant's Shaft, Golden Gate, Reef, 4 miles N.W. of Croydon Rail Stn. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

7663. —— (?). *Assoc.with* Hematite, Wolfram, Garnet, and Mica, in lode. *Loc.* Eungella Stn., Broken R., 30 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 39, p. 6 (1887).

7664. ——. Rocks at Railway Bridge, Fitzroy R., Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* B.D.

Stock Exchanges of Queensland—

Brisbane Stock Exchange.
Gympie Stock Exchange.
Charters Towers Stock Exchange.
Cairns Stock Exchange.

The secretaries of the above Exchanges will give all information concerning local sharebrokers and mining companies on their authorised lists.

Stockdale Sub-artesian Bore. *See under* Artesian Bores. No. 361.

Stockholm (Brilliant G.M. Co.) Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2913; Gold, 3936; Iron Pyrites, 5207.

—— Mine, Coen Goldfield. *Min.Ref.* Gold, *see* 3697.

—— (Comstock) Reef, Charters Towers Goldfield. *Min.Ref.* Copper carbonate, *see* 1913; Copper Pyrites, 2219; Galena, 2878; Gold, 3972; Iron Pyrites, 5159; Zinc Blende, 8121.

Stockman's Cr., 6 miles N.W. of Teesdale. *Min.Ref.* Copper Pyrites, *see* 2151c; Galena, 2759c; Iron Pyrites, 5055a.

—— Mine, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2759a; Silver, 7450d.

—— Amalgamated Mine, Eidsvold Goldfield. *Min.Ref.* Gold, *see* 3653.

—— Reef, Eidsvold Goldfield. *Min.Ref.* Cassiterite, *see* 774; Gold, 3653; Tourmaline, 7826.

—— ——, Talbot and Machine Crs., Etheridge Goldfield. *Min.Ref.* Galena, *see* 2759; Gold, 3742; Iron Pyrites, 5056.

Stockyard Creek, Styx R., S.E. of St. Lawrence. *Min.Ref.* Calcite, *see* 544.

—— —— Silver Mine, Stockyard Cr., N.N.W. of Charters Towers. *Min.Ref.* Azurite, *see* 216; Cerussite, 1231; Copper carbonate, 1920; Malachite, 6294.

Stokes Co. Burke Dist. *See map*, Pl. 20.

Stone (Escort) Creek, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3270.

Stone's Bore. *See under* Artesian Bores. No. 357.

Stonewall Jackson Reef, Rocky, Sandy Cr., Etheridge Goldfield. *Min.Ref.* Galena, *see* 2758; Gold, 3741; Iron Pyrites, 5055.

Stony Creek Bore. *See under* Artesian Bores. No. 161.

—— —— Coal Bore. *See* Sanderson's and Mt. Morgan Co.'s Bores, *under* Coal Bores.

Stony Creek, N.W. of Maryborough. *Min.Ref.* Galena, *see* 2726, 2727; Gold, 3193; Iron Pyrites, 5005; Zinc Blende, 8071.

—— ——, nr. Cairns. *Min.Ref.* Gold (alluvial), *see* 3232.

—— ——. Joins Jackeroo Cr., and enters the Annan R., ¼-mile above Grasstree, about 6 miles S. of Rossville, and about 31 miles S. of Cooktown. *Min.Ref.* Cassiterite, *see* 824.

—— ——, trib. of Neerkool Cr., nr. Stanwell. *Min.Ref.* Calcite, *see* 542; Gold, 4343; Mineral Water, 6573.

—— ——, Stanton-Harcourt Diggings. *Min.Ref.* Gold (alluvial), *see* 3193, (reef) 3621, 3622.

—— —— Opal Mine, Keeroongooloo Run. *Min.Ref.* Precious Opal, *see* 6946A.

—— Ridge, Black Snake Goldfield. *Min.Ref.* Gold, *see* 4393; Iron Pyrites, 5444; Silver, 7539; Tenorite, 7743.

—— Warianna Bore. *See under* Artesian Bores. No. 134.

Storm King Block (589), 5 miles S.E. of Stanthorpe. *Min.Ref.* Cassiterite, *see* 1007; Wolfram, 7991.

Stradbroke Island, Moreton Bay. *Min.Ref.* Fulgurites, *see* 2685; Göthite, 4568.

Geological Note: The rocks belong to the Ipswich Formation (Trias-Jura), and large areas of blown sand exist in various parts of the island. Large lagoons of fresh water are common, whose importance warranted a scheme being formulated, although not adopted, to utilise the water for the main Brisbane supply.

Strathalbyn Goldfield—

Situation: *See maps,* Pls. 16, 17. The field is about 30 miles E.byS. of Ravenswood. *Co.* Gladstone; *Dist.* Kennedy North. Centre—about *Lat.* 20° 11′ S., *Long.* 147° 15′ E.

Proclamation of Field: First gazetted, 10th June, 1880. Last alteration, 9th July, 1885, as follows:—Commencing one mile south from the southern base of a hill known as MacGregor's Bonnet, and bounded thence on the south by a line bearing east one mile; and on the east by a line bearing north five miles; and on the north by a line bearing west five miles; on the west by a line bearing south five miles; and on the south by a line bearing east four miles to the point of commencement.

Area: 16,000 acres (25 sq. miles).

Mineral Statistics: *Included in* "Other Goldfields" in *stat. tables and diagram,* Pls. 36, 46, 46A, 47.

Mineral References: Gold, *see* 4044; Copper (Copper Pyrites) 2235, (Chalcanthite) 1333.

Geological Publications: *Nil.*

Warden: Stationed at Ravenswood. Inspector of Mines: Stationed at Charters Towers.

Strathalpine, W.S.W. of Stanthorpe. *Min.Ref.* Stibnite, *see* 7638.

Strathdarr Lease Sub-artesian Bores. *See under* Artesian Bores. No. 398.

Strathfellow Sub-artesian Bores. *See under* Artesian Bores. No. 399.

Strathfield Station, *viâ* McKinlay, S.E. of Cloncurry. *Lat.*, 21° 19′ S.; *Long.*, 141° E. *Min.Ref.* Hornblende, *see* 4821.

—— —— Sub-artesian Bore. *See under* Artesian Bores. No. 161.

Strathfielan Sub-artesian Bore. *See under* Artesian Bores. No. 442.

Strathlea Bore. *See under* Artesian Bores. No. 237.

Strathleven Co. Cook Dist. *See map,* Pl. 8.

Strathmore Co. Cook Dist. *See map,* Pl. 8.

—— Creek, br. of Bowen R. *Min.Ref.* Analcime, *see* No. 7; Copper carbonate, 1922; Laumonite, 5720; Prehnite, 7077; Thomsonite, 7784.

Stream Tin.. *See* Cassiterite.

Strickland River, trib. of Fly R., Brit. New Guinea. *Min.Ref.* Coal, *var.* Lignite, *see* 1833.

Strontianite. *Compo.*, Carbonate of strontia. *Colour*, yellowish, whitish. *Lustre*, vitreous. *Streak*, white. *H.* = 3-3·5; *Sp.gr.* = 6·46-6·57. *See note under* Strontium. *Contents* (*max.*), Strontia 70 per cent.

7665. ——. Old Bowen Crossing, Pioneer R., nr. Mirani Rail. Stn., 22 miles W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 164, p. 16 (1901).

7666. ——. Eastern Boyne R., 26½ miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis.

Strontiano-Calcite, *var of* Calcite, *which see.*

Strontium (Sr.). *Atom. Wt.* 87·63 *Sp.gr.* 2·5. *Colour*, Yellowish-white metallic.

MINERALS: Celestine, Strontianite, and Strontiano-Calcite.

USES: Strontium, in its metallic form, has no commercial uses. The carbonate is used in clarifying sugar, and the nitrate, mixed with other chemicals, produces the bright red fire in pyrotechnical displays. Both Strontianite and Celestine, carbonate and sulphate respectively, are found in the State. A lode of Strontianite near the Old Bowen Crossing, on the Pioneer River, W. of Mackay, is large and well-defined, but nothing has been done to utilise the mineral.

Strontium carbonate. *See* Strontianite.

Strontium sulphate. *See* Celestine.

Strover's Mine, Mt. Morgan Goldfield. *Min.Ref.* Gold, *see* 4380.

Strüber's Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 916; Chlorite, 1440; Garnet, 3104.

Struck Oil Lease (186), Mt. Morgan Goldfield. *Min.Ref.* Copper Pyrites, *see* 2316A; Gold, 4381; Iron Pyrites, 5435; Stibnite, 7651; Tetradymite, 7748.

GEOLOGICAL NOTE: The country rocks comprise quartzites, slates, and greywackes, of Gympie Formation (Permo-Carboniferous), with intrusive diorite and granite in the vicinity. Gold occurs in quartz reefs, associated with iron pyrites, serpentine, and calcite. *See* G.S.Q. Pub. 103 for details.

—— —— Silver Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 54; Cerargyrite, 1184; Cerussite, 1281A; Galena, 2995; Gold, 4092; Hematite, 4754; Iron Pyrites, 5286; Ironstone, 5581; Minium, 6627; Pyrolusite, 7125; Siderite, 7410.

Struggle Reef, Charleston, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3723.

Stuart River, 24 miles S.W. of Kingaroy Rail. Stn. (Kilkivan line). *Min.Ref.* Stibnite, *see* 7607.

—— and Boyne Rivers (in creeks, head of) (*ante*). *Min.Ref.* Ilmenite, *see* 4884; Magnetite, 5982; Zircon, 8217.

—— and McCoughey Bore. *See under* Artesian Bores. No. 382.

Stuart's Cr. *See* Stewart's Cr. Railway Cutting.

Stud Paddock Bore. *See under* Artesian Bores. No. 324.

Sturt Co. Gregory North Dist. *See map*, Pl. 20.

Stutchbury (Samuel), once Government Geologist for New South Wales.

REPORTS:—

(11th) [Portions of the Dividing Range between Queensland and New South Wales. With Geological Map]. 1853.

(12th) [On the Basalts of the Condamine River, and on portion of Ipswich Coalfield. With Geological Map]. 1854.

(13th) [On the Ipswich Coal Measures]. 1854.

(14th) [On the Country from the North Pine River, *via* Caboolture to Durundur]. 1854.

(15th) [On the Country from Colinton to Gladstone. With Geological Map]. 1855.

(16th) [On part of the Coast District between the Boyne and Fitzroy Rivers. With Geological Map]. Last Report, 1855.

Note.—These reports were published as Parl. Papers, Sydney; also in "Further Papers Relative to the Discovery of Gold in Australia." Lond. By Auth. 1855.

Styx River Coalfield. *See maps*, Pls. 2, 3. The Coalfield is about 12 miles S.E. of St. Lawrence. Centre—about *Lat.* 22° 32′ S., *Long.* 149° 40′ E. *Discovery:* Coal found in 1887. *Min.Ref.* Coal, *see* 1800; Calcite, 544; Kaolin, 5703.

Geological Note: The rock formations about the Styx Rixer are Recent Alluvium (?), Post Tertiary Conglomerate, Coal Measures belonging to the Ipswich Formation (Trias-Jura) and sedimentary rocks belonging to the Permo-Carboniferous and Devonian systems. The Coal Measures contain good coal seams, and are now being developed. *See* G.S.Q. Pub. No. 84 for details and map.

Sub-artesian Bores. *See* Artesian Bores.

7667. —— Water. Racecourse Bore, Eagle Farm, 6 miles N. of Brisbane. *Co.* Stanley; *Dist.* **Moreton.** *Analysis: See under* Artesian Water Analyses, No. 9. *Ref.* G.S.Q. Pub. 58, p. 2 (1890).

Subsidies. Departmental expenditure from 1879-1912—

Year.	Prospecting.	Deep Sinking.	Machinery.
	£ s. d.	£ s d.	£ s. d
1879-1880	1,826 13 11		
1880 1881	863 1 8		
1881-1882	759 8 8		
1882 1883			
1883-1884	318 15 11		
1884-1885	385 7 6		
1885-1886	46 17 9		
1886-1887	60 0 0	9,368 13 4	
1887-1888	...		
1888-1889	1,698 4 2		
1889 1890	1,304 14 0		
1890-1891	1,345 17 7	Nil	
1891-1892	401 0 1		
1892-1893	220 0 0		
1893-1894	399 19 11		
1894-1895	97 2 6	2,305 14 4	
1895-1896	1,013 10 11	1,918 17 5	
1896-1897	1,107 9 7	3,841 19 11	
1897-1898	701 1 6	4.244 19 2	
1898-1899	1,314 18 0	2,539 9 1	
1899 1900	1,668 3 7	6,103 8 7	
1900-1901	1,933 3 11	5,598 18 7	
1901-1902	798 17 2	2,542 10 0	
1902-1903	751 9 5	4,318 2 4	
1903-1904	912 7 10	2,218 15 4	
1904 1905	1,486 5 2	1,709 18 1	
1905 1906	1,152 2 10	1,245 4 11	
1906 1907	1,262 8 6	879 9 8	
1907-1908	1,411 3 2	2,913 10 4	2,450 0 0
1908-1909	4,163 15 4	9,260 10 5	674 5 4
1909-1910	1,738 7 5	6,362 15 8	1,290 7 4
1910-1911	1,848 1 0	3,601 15 8	165 0 0
1911-1912	1,795 7 11	9,728 2 7	491 10 2
	34,785 16 11	80,702 15 5	5,071 2 10

Success Reef, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3815.

Sudest Island, Brit. New Guinea. *Min.Ref.* Gold (alluvial) *see* 3430, (reef) 4556-4558; Hematite, 4810; Iron Pyrites, 5476; Limonite, 5931, 5932; Psilomelane, 7107.

Sugar Bag Sub-artesian Bore. *See under* Artesian Bores. No. 161.

Sugarloaf Cr., trib. of Quart Pot Cr., heads at Block (728) on the Dividing Range, nr. Sugarloaf Mt., and flows with a general W.N.W. trend to join Quart Pot Cr., about 2 miles E. of Stanthorpe. *Length*, about 5 miles. *Tribs.*—Tea Tree Cr., Lode Cr., Roger's Gully, Brown's Gully.

Mineral References: Amethyst, *see* 7168; Beryl, 293; Cairngorm, 7176; Cassiterite, 985, 1025-1028; Copper Pyrites, 2191; Diamond, 2575; Galena, 2837; Garnet, 3117; Hyacinth, 8233; Iron Pyrites, 5116; Rock Crystal, 7189; Sapphire, 2348; Spinel, 7578; Topaz, 7793; Tourmaline, 7858; Wolfram, 8000; Zircon, 8233.

—— Mountain, Stanthorpe. *Min.Ref.* Cassiterite, *see* 978; Wolfram, 7999.

Sullivan and Party's Tin Claim, Mt. Amos, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 799; Tourmaline, 7836.

Sulph-Antimonides; copper, *see* Tetrahedrite; silver, *see* Pyrargyrite.

Sulph-Arsenides; iron, *see* Mispickel; silver, *see* Proustite.

Sulphate of Lead and Copper. *See* Linarite.

Sulphates: alumina, *see* Alunogen, Kalinite, Websterite; copper, *see* Chalcanthite; iron, *see* Copperas; lead, *see* Anglesite; lead and copper, *see* Linarite; lime, *see* Gypsum; magnesia, *see* Epsomite; strontium, *see* Celestine; zinc, *see* Goslarite.

Sulphide Reef, Norton Goldfield. *Min.Ref.* Copper Pyrites, *see* 2294; Gold, 4292; Iron Pyrites, 5388; Mispickel, 6798; Zinc Blende, 8199.

Sulphides; antimony, *see* Stibnite; bismuth, *see* Bismuthinite; cadmium, *see* Cadmium-blende; copper, *see* Bornite, Redruthite, Copper Pyrites, Covelite; iron, *see* Iron Pyrites, Marcasite, Mispickel, Pyrrhotite; lead, *see* Galena; mercury, *see* Cinnabar; molybdenum, *see* Molybdenite; silver, *see* Argentite; tin, *see* Stannite; zinc, *see* Zinc Blende.

Sulphur (S.). *Atom.Wt.* = 32·07; *Sp.gr.* 1·92—2·5 (varies with condition).

GEOLOGICAL NOTE: There are no deposits of native sulphur known in the State, but large bodies of ore, made up of sulphides of iron, copper, zinc, etc., exist in many localities, none of which, however, are utilised for the production of sulphur.

Sulphur (native). *Compo.*, Pure Sulphur. *Colour and Streak*, sulphur yellow. *Lustre*, resinous. *H.* = 1·5-2·5; *Sp.gr.* = 2·05. *See* note above.

7668. ——. Curtis Island, between Port Curtis and Keppel Bay, 5 miles N. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* G.S.M.

7668A. ——. In coal bands. *Loc.* Bellert's Coal Mine, 2½ miles N.E. of Torbanlea Rail. Stn. (North Coast line), Burrum Coalfield. *Co.* Cook; *Dist.* **Wide Bay.** *Ref.* B.D.

7669. ——. *Loc.* Dobu (Goulvain) Island, D'Entrecasteaux Group, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 85, p. 31 (1892), and G.S.M.

7670. ——. *Loc.* Seymour Bay, Fergusson (Moratau) Is., D'Entrecasteaux Group, 231 miles E. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 85, p. 31 (1892).

Sultan 1 N. Mine, Gympie Goldfield. *Min.Ref.* Gold, *see* 4487.

—— Reef, Clermont Goldfield. *Min.Ref.* Gold, *see* 4155.

—— and Lucknow Lease (864), Gympie Goldfield. *Min.Ref.* Gold, *see* 4488.

—— and Taylor Reef, Darkey Flat, Talgai Goldfield. Discovered in 1864 by a miner named Taylor. *Min.Ref.* Gold, *see* 3855.

Summer Hills Bore. *See under* Artesian Bores. No. 199.

Summerville Bore. *See under* Artesian Bores. No. 187.

Sunbeam M.F. (2417), Mt. Flora G. and M. Field. *Min.Ref.* Azurite, *see* 235B; Malachite, 6339A.

—— Silver Lease (254), Sellheim Mineral Field. *Min.Ref.* Copper (ore), *see* 2040; Galena, 3020; Silver (native), 7561; Silver (ore), 7564.

Sunburst P.C., Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2914; Gold, 3939; Iron Pyrites, 5209; Zinc Blende, 8133.

—— 2 E. Mine, Charters Towers Goldfield. *Min.Ref.* Actinolite, *see* 4863.

—— Reef, Jessop's Hill, Palmer Goldfield. *Min.Ref.* Gold, *see* 3671.

Sunday Gully, Leichhardt R., N.W. of Cloncurry. *Min.Ref.* Limestone, *see* 617.

Sundown Copper Mine, Sundown Cr., 12 miles S.W.byW. of Ballandean. *Min.Ref.* Calcite, *see* 490; Cassiterite, 1031; Chlorite, 1445; Copper Pyrites, 2192; Mispickel, 6727; Orthoclase, 7044; Wolfram, 8004; Zinc Blende, 8104; *also* Supplementary Report List, No. 117.

Sundown Creek, trib. of Severn R., Stanthorpe. Rises in the Par. of Ballandean, nr. N.S.W. border, and flows N.W. into the Severn R. about 23 miles S.W. of Stanthorpe. Length, about 3 miles.

MINERAL REFERENCES: Azurite, *see* 204; Calcite, 490; Cassiterite, 1029-1031; Chlorite, 1445; Copper carbonate, 1905; Copper Pyrites, 2192, 2193; Cuprite, 2444; Gold, 3842; Hornblende, 4831; Iron Pyrites, 5115, 5119; Malachite, 6250; Mispickel, 6727-6730; Orthoclase, 7044; Scorodite, 7371; Silver, 7474, 7475; Wolfram, 8004, 8005; Zinc Blende. 8102-8104.

SMELTING WORKS: *See under* Smelting Works in Queensland.

—— Sub-artesian Bore. *See under* Artesian Bores. No. 240.

Sunlight Reef, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2914A; Gold, 3973; Iron Pyrites, 5210.

Sunny South Mine, Thane's Cr. Goldfield. *Min.Ref.* Gold, *see* 3871.

Sunnyside, Mudloo, Copper Mines, 5 miles N.N.W. of Kilkivan. *Min.Ref.* Malachite, *see* 6382A; Redruthite, 7309; Tetrahedrite, 7782.

Sunset Group, Cloncurry. *Includes* Sunset, Lidster, Rose, and Wilmot's Valley M. Leases, and Rosewood M.C. *Min.Ref.* Redruthite, *see* 7206A.

—— M.L. (267), Sunset Group, Cloncurry. *Min.Ref.* Redruthite, *see* 7206A.

—— Reef, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2231; Galena, 2929; Gold, 4030; Zinc Blende, 8145.

—— and General Grant Reef, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2230; Galena, 2930; Gold, 4029; Iron Pyrites, 5244; Zinc Blende, 8146.

Supplementary Reports, Queensland Geological Survey. For other Reports, *see* Lists *under* Geo. Survey Pubs. *and* Gov. Min. Journal.

Ref. No.

1883. In Ann. Rep. Dept. of Mines.

(1.) Stanthorpe Tin-mining District. By W.H.R., p. 50.

1885. In Ann. Rep. Dept. of Mines.

(2.) Mt. Leyshon Gold Deposits. R.L.J., p. 53.
(3.) Townsville (Boring for coal near). R.L.J., p. 57.
(4.) Stanthorpe Tin District. R.L.J., p. 57.
(5.) Gympie Goldfield. R.L.J., p. 58.
(6.) Norton, Cawarral, and New Zealand Gully. R.L.J., p. 59.
(7.) Morinish Goldfield (Blackfellow's Gully). R.L.J., pp. 59, 60.
(8.) Rosewood Goldfield. R.L.J., p. 60.
(9.) Crocodile Goldfield. R.L.J., p. 60.
(10.) Artesian Water in the Western Interior. R.L.J., p. 60.

1887. In Ann. Rep. Dept. of Mines.

(11.) Palmer Goldfield. R.L.J., p. 81.
(12.) Cooktown (Coal near). R.L.J., p. 89.
(13.) Herberton Tin and Silver Fields. R.L.J., p. 91.
(14.) Stanthorpe District. W.H.R., p. 94.

1888. In Q'land Geol. Surv. Progress Report (G.S.Q. Pub., No. 49).

(15.) Normanby Goldfield (Mining Notes). R.L.J., p. 3.
(16.) Clermont Goldfield (Palm-tree Reef). W.H.R., p. 6.
(17.) Rosewood Goldfield (Caledonian Reef). W.H.R., p. 7.

1889. In Q'land Geol. Surv. Progress Report (G.S.Q. Pub., No. 58).

(18.) Crow's Creek Gold Claims. W.H.R., p. 5.
(19.) Barmundo (Tableland) Gold Reefs. W.H.R., p. 5.
(20.) Bompa Gold Reefs. W.H.R., p. 6.
(21.) Norton (Milton) Goldfield (Conran's Reef). W.H.R., p. 8.
(22.) Calliope Goldfield (Connemarra and John Bull Reefs). W.H.R., p. 8.

1890. In Q'land Geol. Surv. Progress Report (G.S.Q. Pub., No. 77).

(23.) Rosewood Scrub (Geological Notes). R.L.J., p. 1.
(24.) Einasleigh Hot Springs. R.L.J., p. 5.
(25.) Cania Goldfield. W.H.R., pp. 12, 13.

Supplementary Reports, Queensland Geological Survey—*continued:*

Ref. No.

1891. In Q'land Geol. Surv. Progress Report (G.S.Q. Pub., No. 87).

(26.) Desert Sandstone Coal-bearing Strata (Evidence affecting age of). R.L.J., p. 1.
(27.) Coal at Clifton, Tannymorel, Killarney, etc. R.L.J., p. 3.
(28.) Talgai Reefs. R.L.J., p. 6.
(29.) Thane's Creek Reefs. R.L.J., p. 6.
(30.) Pikedale Reefs. R.L.J., p. 9.
(31.) Jibbinbah Lodes. R.L.J., p. 10.
(32.) Mount Victoria (Geological and Mining Notes). R.L.J., p. 11.
(33.) Stanwell District (Geological Notes). W.H.R., p. 18.
(34.) Hughenden District (Geological Notes). A.G.M., p. 19.
(35.) Cooktown (Geological Notes). A.G.M., p. 20.
(36.) Townsville (Vicinity of) Geological Notes. A.G.M., p. 23.

1892. In Q'land Geol. Surv. Progress Report (G.S.Q. Pub., No. 94).

(37.) Gympie Diamond Drill Bore. W.H.R., p. 4.
(38.) Talgai Goldfield (Darkey Flat). W.H.R., p. 5.
(39.) Traveston Gold Deposits. W.H.R., p. 6.
(40.) Glastonburry Gold Deposits. W.H.R., p. 6.
(41.) Hyalite in basalt at Cooran. W.H.R., p. 7.
(42.) Charters Towers Goldfield. W.H.R., p. 8.
(43.) Charters Towers Goldfield. A.G.M., p. 10.
(44.) Stockyard Creek Silver Mines. A.G.M., p. 12.

1893. In Q'land Geol. Surv. Progress Report (G.S.Q. Pub., No. 98).

(45.) Mount Coot-tha Park Reserve Gold Mine. R.L.J., p. 1.
(46.) Nambour Coal Discovery. R.L.J., p. 2.

1894. In Ann. Rep. Dept. of Mines and G.S. Progress Report (G.S.Q. Pub., No. 103).

(47.) Artesian Water in the Western Interior. R.L.J., pp. 3-15.
(48.) Clermont Goldfield. R.L.J., p. 10.
(49.) Pine Mountain District. W.H.R., p. 26.
(50.) Mount Victoria Auriferous Deposits. W.H.R., p. 28.
(51.) Struck Oil Reefs. W.H.R., p. 28.
(52.) Great North Lode, near Mt. Morgan. W.H.R., p. 29.
(53.) Clanricarde Gold Mines. W.H.R., p. 30.
(54.) Westwood Reef. W.H.R., p. 30.

1895. In Ann. Rep. Dept. of Mines and Q.G.S. Progress Report (G.S.Q. Pub., 108).

(55.) Palmer Goldfield (Prospecting for Gold in the "Conglomerate" Range). R.L.J., p. 6.
(56.) Mount Madden. R.L.J., p. 11.
(57.) Maytown (Alexander and Rob Roy Reefs). R.L.J., p. 12.
(58.) Cloncurry Gold Mining Notes. W.H.R., p. 14.
(59.) Ipswich District (Geological Notes on, and Map of). A.G.M., p. 18.
(60.) Brookfield Gold Mines. A.G.M., p. 25.

1896. In Q'land Geol. Surv. Progress Report (G.S.Q., Pub. No. 143).

(61.) Dinmore. Clay at Ebbw Vale Colliery. R.L.J., p. 2.

1897. In Q'land Geol. Surv. Progress Report (G.S.Q. Pub., No. 143).

(62.) Sandgate, Report on (Springs near). R.L.J., p. 7.
(63.) Enoggera Gold Mines. R.L.J., p. 9.
(64.) Clermont Quarry Hill Shaft. R.L.J., p. 9.
(65.) Mackenzie Island, Fitzroy River (Geological Note). B.D., p. 14.
(66.) Cawarral Creek, nr. Rockhampton (Turquoise Deposits). B.D., p. 14.
(67.) Keppel Bay Islands. Geological Notes. B.D., p. 16.

Supplementary Reports, Queensland Geological Survey—*continued:*

Ref. No.

1898. In Q'land Geol. Surv. Progress Report (G.S.Q. Pub., No. 143).

(68.) Mount Taylor Gold Mine. R.L.J., p. 18.
(69.) Dalby (Proposal to bore for Artesian Water at). R.L.J., p. 19.
(70.) Natal Downs (Probability of finding Artesian Water on). W.H.R., p. 22.
(71.) Mount Flori Gold Prospectiing Area. W.H.R., p. 23.
(72.) Maria Creek Coal Bore. B.D., p. 24.
(73.) Mount Alexander Gold Mine, near Mount Morgan. B.D., p. 26.

1899. In Ann. Rep. Dept. of Mines *and* Q.G. Surv. Progress Report (G.S.Q. Pub., No. 150).

(74.) Moonmera Coal and Copper Deposits. W.H.R., p. 1.
(75.) Peak Downs Copper Mine. W.H.R., p. 2.
(76.) Degilbo. Robina Copper Mine. W.H.R., p. 4.
(77.) Bompa Syndicate Copper Property. W.H.R., p. 5.
(78.) Many Peaks Syndicate Copper Property. W.H.R., p. 7.
(79.) Eastern Boyne Goldfield. W.H.R., p. 8.
(80.) Bundaberg Coal Measures. W.H.R., p. 10.
(81.) Bloomfield River Tin Water Races. W.E.C., p. 11.
(82.) Tartana Copper Mines, Chillagoe District. B.D., p. 12
(83.) Wycarbah Fire Clay. B.D., p. 14.
(84.) Hamilton, near Brisbane (Post Tertiary Fossils). B.D., p. 15.

1900. In Ann. Rep. Dept. of Mines *and* Q'land G. Surv. Report (G.S.Q. Pub., No. 159).

(85.) Great Gorge Gold Mine, Curra. W.H.R., p. 3.
(86.) Enterprise Mine, Gympie. W.H.R., p. 4.
(87.) Murphy's Creek Coal Deposits. W.H.R., p. 4.
(88.) Stanthorpe Tin Dredging. W.H.R., p. 5.
(89.) Bompa Silver Lead Property. W.H.R., p. 6.
(90.) Pinnacle Copper Workings. W.H.R., p. 8.
(91.) North-Western Queensland (Geological Notes on). W.E.C., p. 10.
(92.) Clermont Gold Leads (Boring Plant for). B.D., p. 15.
(93.) Duaringa. Notes on Fossil Fish. B.D., p. 16.
(94.) Warren and Mount Lion (Further Notes on). B.D., p. 17.
(95.) Mineral Springs of Queensland. B.D., p. 19.
(96.) Chillagoe Geological Notes. B.D., p. 20.
(97.) Taromeo (Red Queen and Black Diamond Mines). L.C.B., p. 24.

1901. In Ann. Rep. Dept. of Mines *and* Q'land G. Surv. Prog. Report (G.S.Q. Pub., No. 175).

(98.) Roma Oil Bore. W.H.R., p. 4.
(99.) Mitchell Limestones (Notes on fossils and rocks). W.H.R., p. 4.
(100.) Stanwell (Bushley Bore near). B.D., p. 8.
(101.) Selma Cretaceous (?) Deposits. B.D., p. 10.
(102.) Anakie and Clermont (Auriferous country between). B.D., p. 10.

1902. In Ann. Rep. Dept. of Mines.

(103.) Dawson and Mackenzie Coalfields. B.D., p. 170.
(104.) Stanwell Artesian Basin. B.D., p. 171.
(105.) Anakie Sapphire Fields. B.D., p. 173.
(106.) Talgai Goldfield. C.F.V.J., p. 177.
(107.) Thane's Creek Goldfield. C.F.V.J., p. 178.

1903. In Ann. Rep. Dept. of Mines.

(108.) Dawson and Mackenzie Coalfields. B.D., p. 173.

Supplementary Reports, Queensland Geological Survey—*continued:*

Ref. No.

1904. In Ann Rep. Dept. of Mines.

(108A.) Mining Developments on the Central Gold and Mineral Fields. By H. S. Warde, Inspector of Mines, pp. 103-09.
(108B.) Kangaroo Hills and Star River Mineral Fields. By Sydney Horsley, Inspector of Mines, pp. 109-111.
(108C.) Walsh and Tinaroo Mineral Field and Hodgkinson Goldfield. By Murray Russell, Inspector of Mines, pp. 111-115.
(109.) Wolfram in Queensland. B.D., p. 150.
(110.) Mudloo Copper Mines. L.C.B., p. 155.
(111.) Monumental and Architectural Stones in Queensland. L.C.B., p. 156.

1905. In Ann. Rep. Dept. of Mines.

(112.) Dawson and Mackenzie Coal Fields (Literature on). B.D., p. 156.
(113.) Kangaroo Hills Mineral Field. Tin, Copper, Wolfram. W.E.C., p. 158.
(114.) Dawson and Mackenzie Coal Fields Test. L.C.B., p. 163.

1907. In Ann. Rept. Dept. of Mines.

(115.) Jimbour Estate (Notes on Coal). B.D., p. 167.
(116.) Pikedale Silver Mines. W.E.C., p. 170.
(117.) Sundown Tin Mine, Ballandean. W.E.C., p. 171.
(118.) Silver Spur Copper Mine, near Texas. W.E.C., p. 171.
(119.) Queen Silver-Lead Mine, Ballandean. W.E.C., p. 171.
(120.) Normanby Goldfield. (Perseverance Mine.) W.E.C., p. 171.
(121.) Normanby Extended G.F. (Lamington Mine). W.E.C., p. 171.
(122.) Stanhills Tin Field. W.E.C., p. 172
(123.) Oaks Goldfield. W.E.C., p. 173.

1908. In Ann. Rep. Dept. of Mines.

(124.) Gympie Goldfield (Geological Survey of). B.D., p. 168.
(125.) Manganese on Eel Creek, Gympie. B.D., p. 169.
(126.) East Moreton, Logan Village, and Bribie View. (Boring for Coal.) W.E.C., p. 172.

1909. In Ann. Rep. Dept. of Mines.

(127.) Kingsborough Mining Notes. L.C.B., p. 174.
(128.) Bee Creek (Notes on Coal). L.C.B., p. 175.
(129.) Black Rock (Notes on Coal). L.C.B., p. 175.

1910. In Ann. Rep. Dept. of Mines.

(130.) Gympie Goldfield (Geological Survey of). B.D., p. 181.
(131.) Ban Ban Mine, Gayndah District. L.C.B., p. 189.
(132.) Nundah Coal-boring Operations. E.O.M., p. 191.

1911. In Ann. Rep. Dept. of Mines.

(133.) Maryborough Coal Measures and Marine Beds. B.D., p. 195.
(134.) Gympie Geological Survey Notes. B.D., p. 197.
(135.) Macpherson Range (Tripolite Deposits). B.D., p. 197.
(136.) Coal Measures near Southport. B.D., p. 197.
(137.) Prospecting Coastal Coal Deposits. B.D., p. 197.
(138.) Portland Cement Manufacture (Mineral Localities). B.D., 198
(139.) Dawson River Coal-boring Operations. W.E.C., p. 201.
(140.) Bundamba. (Boring for the Aberdare Seam.) W.E.C., p. 201.
(141.) Charters Towers Goldfield Mining Notes. E.O.M., p. 205.
(142.) Ravenswood Goldfield Mining Notes. E.O.M., p. 205.

1912. In Ann. Rep. Dept. of Mines.

(143.) Burrum Coal Measures (Geological Notes). B.D., p. 199.
(144.) Coal-boring Operations (Making Records of). B.D., p. 200.
(145.) Stanwell Coal-boring Operations. B.D., p. 201.
(146.) East Moreton (Nundah, etc.) Coal Measures. B.D., p. 201.
(147.) Portland Cement Manufacture (Limestone Notes). B.D., p. 202.
(148.) Prospecting for Mineral Oil (General Note). B.D., p. 203
(149.) Collecting Geological Data. B.D., 204.
(150.) Ipswich Coalfield (Survey Notes). W.E.C., p. 206.
(151.) Beaudesert Coal-mining Operations. E.O.M., p. 210.

For other Reports, *see* Lists *under* Geol. Sur. Pubs. *and* Gov. Min. Jour.

Surface Hill, Gorge Cr., Cape R. Goldfield. *Min.Ref.* Gold, *see* 4064.

Surprise Creek, trib. of Leichhardt River, Cloncurry. *Min.Ref.* Gold (alluvial), *see* 3188.

Surprise Group, Cloncurry. *Includes* Surprise, Surprise South, Mt. Ferrum, and Jumbo M. Leases. *Min.Ref.* Copper (ore), *see* 2019B.

—— Leader, Bishop's Cr., Cloncurry. *Min.Ref.* Gold, *see* 3453; Ironstone, 5483.

—— Reef, Table Top, Croydon Goldfield. *Min.Ref.* Gold, *see* 3547.

—— Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1119.

——-Zealandia Reef, in Yorkey's Surprise and Zealandia Lease, Yorkey's Goldfield. *Min.Ref.* Cervantite, *see* 1310; Gold, 4414; Iron Pyrites, 5456; Stibnite, 7656.

Surrey Bore. *See under* Artesian Bores. No. 187.

—— Co. Burke Dist. *See map*, Pl. 20.

Surry Hills, Croydon Goldfield. *Min.Ref.* Graphite, *see* 4586.

Susan Leader, Christmas Hill, E.S.E. of Percyville. *Min.Ref.* Gold (alluvial and reef), *see* 3791A.

Suter's (Coolibah) Bore. *See under* Artesian Bores. No. 293.

Swamp Bore. *See under* Artesian Bores. No. 195.

Swan Creek (Rail. Stn.), 7 miles E. of Warwick. *Min.Ref.* Coal, *see* 1638; Tripolite, 7030B.

Swan's Reef, 70-miles Diggings, S. of Charters Towers. *Min.Ref.* Galena, *see* 2923; Gold, 3985; Iron Pyrites, 5224.

Swanbank Colliery, Bundamba Coal Area, Ipswich. Mining operations commenced here in 1895. *Min.Ref.* Coal, *see* 1747.

Sweer's Island, 28 miles N. of Gulf Coast, 54 miles N.byE. of Burketown. *Co.* Wellesley; *Dist.* Burke.

GEOLOGICAL NOTE: The rocks comprise siliceous sandstones of "Desert Sandstone" Formation (Upper Cretaceous) and calcareous sandstones of more recent age. *See* G.S.Q. Pub. No. 180 for note.

Swiper's Flat, Mulgrave Goldfield. *Min.Ref.* Gold (alluvial), *see* 3221.

Sydenham Bore. *See under* Artesian Bores. No. 204.

Sylvester Cr., trib. of Herbert R. *Min.Ref.* Halite, *see* 4656.

Sylvania Run Bores. *See under* Artesian Bores. No. 410.

Syndicate Tin Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1120.

Taabinga Village, Kingaroy Rail. Stn. *Min.Ref.* Ilmenite, *see* 4885; Muscovite, 6887; Tourmaline, 7824; Rutile, 7324.

Table Derby Bore. *See under* Artesian Bores. No. 347.

Tables—

Artesian Bores. *See* separate heading.
Artesian Water Analyses. *See under* Artesian Bores.
Coal Analyses. *See under* Coal.
Commonwealth Mineral Returns (Summary). *See under* Mineral Production.
Metal Values in London. *See* separate heading.
Mineral Statistics. *See* Plates 36 to 47, which include Tables and Diagrams.
Wages. Average rates on mines, etc. *See* separate heading.

See also under Lists.

Table Mt., 5 miles E.byS. of Stanwell. *Min.Ref.* Epidote, *see* 2603; Gold, 4344; Zoicite, 8239.

Tableland (Barmundoo) Goldfield. *See* Barmundoo Goldfield. *See also* Supplementary List, No. 19.

—— (The), head of Dixon's Cr. (br. of Lynd R.), W. of Fossilbrook. *Min.Ref.* Cassiterite, *see* 832; Molybdenite, 6829; Wolfram, 7939.

——, Haughton Valley, S. of Townsville. *Min.Ref.* Gypsum, *see* 4622.

——, nr. Lake Lucy, 54 miles S.W.byW. of Cardwell. *Min.Ref.* Hematite, *see* 4739.

——, Marodian Goldfield. *Min.Ref.* Epidote, *see* 2608.

—— Alluvial Tin Claims, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 812; Wolfram, 7933.

—— Reef, Black Snake Goldfield. *Min.Ref.* Gold, *see* 4394; Ironstone, 5632.

Table-Top, Croydon Goldfield. *Reefs*—Federation, Last Chance, Day Dawn, Surprise, Mt. Morgan, Happy Jack, Ida, Break o' Day, Ace of Hearts, Hope, Black Diamond, Comet, Bobby Dazzler, Gt. Eastern, Confidence, Independence, Glencoe, and Rose of Denmark. *Min.Ref.* Anglesite, *see* 12A, 12B; Cerussite, 1187A, 1188; Galena, 2710D, 2711; Gold, 3540-3548; Iron Pyrites, 4962, 4963; Ironstone, 5501-5503; Massicot, 6517-6521; Minium, 6577; Mispickel, 6645; Pyromorphite, 7136-7139.

—— —— and Mulligan's (half-way between), Croydon Goldfield. *Min.Ref.* Lithomarge, *see* 5707.

Tabular Spar. *Syn.* Wollastonite, *which see.*

Tachappa Creek, Russell Goldfield. *Min.Ref.* Cassiterite, *see* 963; Gold (alluvial), 3225.

Tailing Yards Bore. *See under* Artesian Bores. No. 432.

Tailor's Plains Bore. *See under* Artesian Bores. No. 432.

Tala Bore. *See under* Artesian Bores. No. 422.

Talawanta Bore. *See under* Artesian Bores. No. 422.

—— Co. Burke Dist. *See map*, Pl. 20.

Talbot Co. Leichhardt Dist. *See map*, Pl. 10.

—— and Machine Creeks (between), Etheridge Goldfield. *Min.Ref.* Galena, *see* 2759; Gold, 3742; Iron Pyrites, 5056

Talc. *Compo.*, Hyd.-silicate of Magnesia. *Colour*, whitish, greenish, etc. *Streak*, white. *Lustre*, Pearly. Sectile. Feels greasy. *H.* = 1-1·5; *Sp.gr.* = 2·7-2·8. *Contents* (*max.*), Magnesia 31 per cent.

Mineral Note: Commonly associated with ores of tin, iron, manganese, zinc, copper, lead, gold, and silver, and also with Wolfram, Molybdenite, Serpentine, Chlorite, Garnet, Felspar, etc. Large deposits of Talc are unknown, but small masses have been met with at Mt. Warminster of very pure quality and in fine flakes.

Uses: Slabs of this mineral are used as firebricks, and as electrical insulators. Powdered talc is used in the manufacture of paper, toilet powders, lubricants, soaps, fire-proof paints, etc. Being a non-conductor of heat or cold, it is useful as boiler coverings and as linings in cold storage chambers.

7671. ——. *Assoc.with* Cassiterite, Ruby Tin, Tourmaline, and Orthoclase, in quartz reef. *Loc.* Owen and Davidson Tin Lease, Mt. Amos, 20 miles S.S.E. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 35, p. 15 (1887).

7672. ——. *Assoc.with* Mispickel, Cassiterite, Wolfram, and Tourmaline, in quartz. Mt. Amos Tin Mine (*ante*). *Ref.* G.S.Q. Pub. 35, p. 15 (1887).

7673. ——. *Assoc.with* Gold, in quartz vein, in garnet schist. *Loc.* One mile N.E. of Ebagoolah, Hamilton Goldfield, 33 miles W. of Port Stewart, 173 miles N.W.byW. of Cooktown. *Co.* Coen; *Dist.* Cook. *Ref.* G.S.M.

7674. ——. Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn., 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 64 (1900).

7675. ——. Dargalong Silver-Lead Mines, 7 miles S. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 64 (1900).

7675A. ——. Large outcrops. *Loc.* Railway cutting at junction of Cowley br. tramline and main Liverpool Cr. tramline, south of Mourilyan. *Co.* Nares; *Dist.* Cook.

7676. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz reef. *Loc.* Von Moltke Mine, Leyburn Goldfield, 28 miles W.byN. of Warwick. *Co.* Merivale; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 71 (1898).

7677. ——. *Assoc.with* Cassiterite and Malachite, in quartz blebs. *Loc.* Orient Tin Claim, Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 13, p. 13 (1883).

7678. ——, Copper Pyrites, Cassiterite, and Penninite, in quartz. *Loc.* Wheal Vohr Claim, Herberton (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 64 (1900), and G.S.Q. Pub. 13, p. 16 (1883).

7679. —— (impure). O'Loan and Party's Lease, Mt. Garnet Rail. Stn., Return Cr., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 125, p. 32 (1897).

7680. ——. *Assoc.with* Gold, Iron Pyrites, Magnetite, Hematite, Limonite, Chalcanthite, and Manganese-dioxide, in porphyry rock. *Loc.* Mt. Leyshon Mine, 16 miles S. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 18, p. 2 (1885), and 73, p. 13 (1891).

7681. —— chrome-bearing). Of emerald colour, in quartz reef. Nr. Dead Horse Lead, ¾-mile S. of Clermont Rail. Stn., Clermont Goldfield. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* B.D. *See also* No. 1471.

——. **Steatite** (*var.*). *Syn.* Soapstone, French Chalk. Massive, granular, and without foliation.

7682. —— ——. *Assoc.with* Cassiterite and Serpentine, in quartzite. *Loc.* Come-by-Chance Mine, Watsonville, head of James Cr., br. of Walsh R., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 13, p. 22 (1883).

7683. ——. *Assoc.with* Cassiterite, Copper, and Noble Serpentine, in greywackes and jasperised clay shale. *Loc.* Good Friday Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883), and P.R.S.Q., vol. 15, p. 64 (1900).

7684. —— ——. *Assoc.with* Cassiterite. *Loc.* North Australian Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

7685. —— ——. Clifton Colliery, Clifton Rail. Stn., 145 miles (by rail) W.S.W. of Brisbane (Main line). *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* P.R.S.Q., vol. 4, p. 69 (1887).

7686. —— ——. *Assoc.with* Cassiterite, Mispickel, Chlorite, Biotite, Orthoclase, and Hornblende, in lode. *Loc.* Gt. Northern Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

7687. —— ——. *Assoc.with* Cassiterite, Wolfram, Serpentine, Orthoclase, and Chlorite, in quartz lode. *Loc.* Soggaorth Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 6 (1883), and P.R.S.Q., vol. 4, p. 59 (1887).

7688. —— ——. *Assoc.with* Iron Pyrites and Cassiterite, in diorite dyke. *Loc.* St. Mungo Tin Claim, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 20 (1883).

7689. —— ——. *Assoc.with* Cassiterite, Serpentine, and Viridite, in porphyry. *Loc.* St. Patrick Tine Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, pp. 8, 9 (1883).

7690. —— ——. *Assoc.with* Gypsum and Sulphide Ores. *Loc.* Queen Reef, Charters Towers Goldfield, 82 miles (by rail) S.W.byS. of Townsville. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4 (p. 72 (1887).

7691. —— ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, and Zinc Blende, in quartz. *Loc.* Politician Mine, Sandy Cr., 2¾ miles E.S.E. of Ravenswood Rail. Stn. (Gt. Northern Rail.), Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 48 (1887).

7692. —— ——. *Assoc.with* Azurite, Galena, Kaolin, and Lithomarge, in quartz lode. *Loc.* Hidden Treasure E. Lease (166), Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Assays: See* No. 221. *Ref.* G.S.Q. Pub. 82, p. 7 (1892).

7693. —— ——. *Assoc.with* Gold, Iron Pyrites, Siderite, Calcite, and Felspar (crystals), in quartz. *Loc.* St. Catherine Reef, Yatton Goldfield, 21 miles S.W. of St. Lawrence. *Co.* Killarney; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 39, p. 8 (1887).

7694. —— ——. *Assoc.with* Gold, Silver, Tile Ore, Minium, and Copper carbonate, in quartz reef. *Loc.* 4 miles N.W. of Boothill and Tierawoomba Crs., 50 miles S.S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Assay: See* No. 7505. *Ref.* G.S.Q. Pub. 39, p. 7 (1887).

7694A. —— ——. *Assoc.with* Chlorite and Ironstone, in shale and diorite. *Loc.* Keely and Valentine's Claim, Nuggety Gully, Mt. Britton Goldfield, 75 miles (by road) S.W. of Mackay. *Co.* Wodehouse (*ante*). *Ref.* G.S.Q. Pub. 39, p. 4 (1887).

7695. —— —— (white and yellow). *Loc.* Mt. Warminster, 20 miles (by rail) N.E. of Rockhampton (Yeppoon line). *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* A.R., p. 138 (1908).

7696. —— ——. Westwood, 31 miles (by rail) S.W. of Rockhampton. *Co.* Pakington; *Dist* Port Curtis. *Ref.* L.B. 1, p. 756 (1886).

Taldora Co. Burke Dist. *See map,* Pl. 20.

Taleroo Bore. *See under* Artesian Bores. No. 177.

Talgai (near), 17 miles N. of Warwick. *Min.Ref.* Coal, *see* 1639.

Talgai Goldfield—

Situation: *See maps*, Pls. 12, 13. 3 miles W .of Pratten, 21 miles W.N.W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. Centre—about *Lat.* 28° 10′ S., *Long.* 151° 45′ E.

Discovery: In 1863. Population: Under 20.

Proclamation of Field: First gazetted, 23rd October, 1863. Last alteration, 17th June, 1902, as follows:—Commencing on the left bank of the Condamine River at the eastern extremity of the northern boundary of portion 82, parish of Pratten, and bounded thence by that river downwards to the south-east corner of portion 170, by the south-east and south boundaries of that portion, by the south and south-east boundaries of portion 36v to the east boundary of Talgai Goldfield, proclaimed in *Government Gazette,* 1882, volume 2, folio 200, by the west, north, and west boundaries of portion 36v, the west boundary of portion LIV., the south boundary of portion LV., the west boundary of portion LV., the south boundary of portion LVI., the south boundaries of portions 55v and 50v, the east, the north, the west, and part of the south boundaries of the reserve for public purposes and a line east to the north-east corner of portion 42v, by the east and south boundaries of that portion south and west to portion 577, by the east and south boundaries of that portion south and west to portion LXVIII., by the east boundaries of that portion and portion LXX., south to portion 32v, by the north-east and south boundaries of portion 32v, by the east and south boundaries of portion 33v southerly and westerly to Thane's Creek, by that creek upwards to the western extremity of the northern boundary line of portion 2339, by the north-west, north-east, and south-east boundaries of that portion to Thane's Creek, by that creek upwards to the west corner of portion 1555, by the north-west and north-east boundaries of that portion, by the north-west boundary of portion 1355, by the north-east boundaries of that portion and portion 1356, by the north-west and north-east boundaries of portion 1362 and the north boundary of portion 1558 easterly to portion 1091, by the west boundaries of portion 1091, the west and north boundaries of portion 1121, the north boundary of portion 1060 easterly of portion 72, by the west boundaries of portions 72, 71, 68, 1323, and 806, north to portion 1110, by the south boundary of portion 1110, by the south and west boundaries of portion 1127, a line north, the south and west boundaries of portions 43 and 42, the south boundaries of portions 419, 163, and 427, by the west boundary of portion 427, the north boundaries of portions 427 and 163, to the north-east corner of the lastnamed portion, by a line north to the north-west corner of portion 83; and thence by a line east to the point of commencement;—exclusive of all alienated lands within these limits.

Area: 49,220 acres (nearly 77 sq. miles).

Mineral Statistics: Gold. *Included in* "Other Goldfields" *in stat. tables and diagram*, Pls. 36, 46, 46a, 47. No separate records.

Mineral References: Gold (alluvial), *see* 3252-3254, (nugget) 3439-3441, (reef) 3850-3863; Lead (Galena), 2842; Copper Pyrites, 2198; Manganese (Dioxide), 6425, 6426; Iron (Iron Pyrites) 5121-5125, (Limonite) 5856-5859, (Mispickel) 6732. Other Minerals—Ferro Calcite, 577.

Geological Note: The rocks on the field form two series, *i.e.*, the Lower Bowen Formation (Permo-Carboniferous) and the Walloon Formation (Trias-Jura). The former consists of slates, shales, sandstones, and grits, traversed by dykes of basalt and by gold-bearing quartz reefs, on which patches of the shales and sandstones of the Walloon Formation rest unconformably. Alluvial deposits containing gold exist in all the gullies, and tin is frequently found in association with the gold in the drifts. *See* G.S.Q. Pub. No. 120.

Geological Publications: Reports—Nos. 40 (1887), 120 (1898), 129 (1898), 186 (1903), 205 (1906). *See* Geol. Surv. Pub. List for title of Reports; *also* Supplementary Report List, Nos. 28, 38, 106.

Warden: Stationed at Warwick. Inspector of Mines: Stationed at Gympie.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— Station (reef, 2½ miles S.W. of), W.S.W. of Warwick. *Min.Ref.* Gold, *see* 3863; Iron Pyrites, 5125; Mispickel, 6732.

—— West Sub-artesian Bore. *See under* Artesian Bores. No. 400.

Talisker Sub-artesian Bore. *See under* Artesian Bores. No. 194.

Talisman Reef, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, Iron Pyrites, *see* 3974.

—— and New Dawn G.M. Lease (Peabody and North Australian Reefs), Charters Towers Goldfield. *Min.Ref.* Gold, *see* 3940; Iron Pyrites, 5211.

"Tally Ho" Claim, Mt. Spencer Run. *Min.Ref.* Copper Pyrites, *see* 2271A; Gold, 4188A; Iron Pyrites, 5329A; Silver, 7505A. *See* A.R.D.M., 1909, p. 174.

Talleyrand Bore. *See under* Artesian Bores. No. 198.

Tallwood Resumption Bore. *See under* Artesian Bores. No. 401.

Talpy Sub-artesian Bore. *See under* Artesian Bores. No. 440.

Tamaree, N. of Gympie. *Railway Base* for limestone quarries. *Min.Ref.* Limestone, *see* 698. *Geological Note.*—The limestone deposits are of Gympie Formation (Permo-Carboniferous), and are interbedded with shales.

Tambo Co. Mitchell Dist. *See map*, Pl. 18.

—— Run Bores. *See under* Artesian Bores. Nos. 402, 403.

—— Township Artesian Bore. *See under* Artesian Bores. No. 23.

Tambourine Group, Cloncurry. *Includes* Tambourine R.C., Tambourine S. M.L., and Banjo M.L. *Min.Ref.* Chrysocolla, *see* 1508, 1509; Copper (native), 1982; Copper Pyrites, 2096; Iron Pyrites, 4928, 4929; Limonite, 5789, 5790; Malachite, 6149, 6150; Redruthite, 7247, 7248; Tile Ore, 2525; Tourmaline, 7815.

—— R.C. (286), Tambourine Group, Cloncurry. *Min.Ref.* Azurite, *see* 170; Chrysocolla, 1509; Copper Pyrites, 2096; Iron Pyrites, 4929; Limonite, 5790; Malachite, 6150; Redruthite, 7248; Tourmaline, 7815.

Tamborine Mountain, S. of Logan Village, between Beaudesert and South Coast Railway line. Rail. line under construction from Logan Village will reach to the foot of the Tableland, which is 9 miles long. *Lat.*, 27° 53′ S.; *Long.*, 153° 10′ E. *Min.Ref.* Chalcedony, *see* 1395A; Iron Pyrites, 5352A; Olivine, 6930; Opal (resin), 6995; Pyrrhotite, 7161B. *Geological Note.*—Basalt prevails on the Tableland, the base being of Trias-Jura rocks.

Tamworth Run Bore. *See under* Artesian Bores. No. 404.

Tanbar Co. Gregory South Dist. *See map*, Pl. 18.

Tangalooma Point, Moreton Is., N.E. of Brisbane. *Min.Ref.* Fulgurites, *see* 2686A.

Tangorin Bore. *See under* Artesian Bores. No. 405.

Tannymorel. *See maps*, Pls. 12, 13. Situated 23 miles E.S.E. of Warwick, on Killarney Branch line. *Min.Ref.* Coal, *see* 1634, 1635. *See also* Supplementary Report List, No. 27.

Geological Note: The coal measures in this locality belong to the Walloon Formation (Trias-Jura), and contain coal seams of good quality and of workable thickness.

Discovery: Coal was found here in 1882 by Moryatt. Systematic work only started in 1897, when the Tannymorel Coal Mining Co. took over the mine.

Tantalate of iron, *see* Tantalite.

Tantalite. *Compo.*, Tantalate of iron. Graduates into Columbite, the niobate. Part of the iron replaced by manganese, and when in excess forms the variety known as mangano-tantalite. *Colour*, Iron-black, brownish-black. Brittle. *H.* 6. *Sp.gr.* 5·3-7.3. *Contents* (*max.*), Tantalic oxide 86 per cent.

7697. ——. In Beach Sand. Johnstone River, Geraldton, 130 miles N.W. of Townsville. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. No. 196, pp. 13, 14 (1905).

Mineral Note: The minerals associated with Tantalite in the beach sands include Gold, Tin, Monazite, Platinum, Ilmenite, Magnetite, Zircon, Garnet, and Quartz. In the Walsh and Tinaroo District a Tantalite lode is said to occur, but there is no official record of its occurrence.

Tantalum (Ta.) *Atom.Wt.* = 181·5; *Sp.gr.* = 16·64. *Colour*, steel-grey.

Mineral: *See* Tantalite and Columbite.

Uses: The metal is used in the preparation of ferro-tantalum, an alloy having the property of imparting great hardness and tensile strength to steel when added in certain small proportions. It is also used in the manufacture of incandescent electric light filaments.

Tantivey Colliery, North Ipswich Coal Area. *Min.Ref.* Coal, *see* 1747a.

Tanyalba Cr., W.byS. of Gundiah (North Coast Rail. line). *Min.Ref.* Coal, *see* 1820, 1821.

Tara Bores. *See under* Artesian Bores. Nos. 105, 406.

Taranganba, 27 miles N.W. of Rockhampton, and 10 miles N. of Emu Park Rail. Stn. Gold discovered here in 1885. *Min.Ref.* Gold, *see* 4345; Kaolin, 5702; Limonite, 5914; Manganese-dioxide, 6478.

Tarbrax Run Bore. *See under* Artesian Bores. No. 407.

Target, and No. 1 East Mines, Dry River Silver Mines, 12 miles S.S.W. of Herberton. *Min.Ref.* Argentite, *see* 98; Cerussite, 1221, 1222; Galena, 2858, 2859; Massicot, 6536; Minium, 6597; Siderite, 7408.

Targinie Head Stn. (½-mile S.S.E. of), 9 miles W. of Gladstone. *Min.Ref.* Epidote, *see* 2602; Garnet, 3142; Hematite, 4788; Magnetite, 6042.

Targinie Township, N.W.byW. of Gladstone. *Lat.*, 23° 50′ S.; *Long.*, 150° 8′ E. *Min.Ref.* Azurite, *see* 248; Copper Pyrites, 2295; Gold, 4311; Malachite, 6360, 6361. *Discovery.*—Gold was first found here on 18th December, 1900.

Geological Note: The country rocks are granite, slate, and garnetiferous-epidote rock, the latter occurring between the granite and the slate. Gold, with copper, occurs in ironstone and manganese ore associated with garnet rock, and without copper in quartz reefs some distance from garnet rock.

—— Reef, 4 miles N.N.W. of Yarwun Rail. Stn. *Min.Ref.* Gold, *see* 4297b; Silver, 7527c. *See also under* Govt. Ming. Jour., Special Report No. 10.

—— (1 mile N.E. of), N.N.W. of Gladstone. *Min.Ref.* Manganese-dioxide, *see* 6472.

—— Cr. and Calliope R (between), W. of Gladstone. *Min.Ref.* Psilomelane, *see* 7099.

Tariff of Commonwealth Customs. *See under* Customs Duties.

Tariff of Smelting Works (Summary)—

Electrolytic Refining and Smelting Co. of Australia, Limited. (Office: Bridge st., Sydney; Works: Pt. Kembla, N.S.W.):—

Gold and Silver—£4 per oz. for gold; payment in full if over 2 dwt. per ton. Standard quotations for silver; payment in full if over 5 oz. per ton. Smelting charges, 25s. per ton for 10 tons and over, 30s. for less than 10 tons. No other charges on gold and silver ores.

Copper—Spot quotation for standard copper on day of sampling, less 2s. 6d. per unit. Pay on result of wet assay, less 1 unit up to 15 per cent.; less 1·3 units over 15 per cent. Smelting charge on ores containing over 20 per cent. copper, *nil*; on ores between 20 per cent. and 9 per cent., from 5s. to 15s. per ton. Returning charge on ores is from 2s. 2½d. to 3s. 2d. per unit of nett copper contents, according to grade of ore. These terms are applicable to ores from which first-class copper can be made, very rich refractory ores or other material being subject to special terms. Special tariff for copper ores and mattes free from gold and silver.

Payments—On agreement of assays.

Tariff of Smelting Works (Summary)—*continued:*

Queensland Copper Co., Limited (Mt. Perry, Queensland):—

Gold and Silver—Gold, £4 per oz. Silver, quoted London price for bar silver during week of sale. On gold ores assaying under 10 dwt. per ton, 93 per cent. of assay value paid; over 10 dwt., 94 per cent.; over 1 oz., 95 per cent. On silver ores, 90 per cent. is paid, less 3 oz. per ton.

Copper—Price paid is current quotation for standard copper, on wet assay less 1·3 units. Smelting charge varies according to composition, and for ores containing 30 per cent. of silica, and enough iron to balance it, 35s. per ton is charged, with an increase of 6d. for every additional unit of silica. Special terms for low-grade basic copper ores. Returning charge is £14 per ton off current London quotation, and balance divided by 100 gives price per unit of copper on which consignment note is made out.

Payments—On agreement of assays.

Sampling—Charge of £1 when under 10 tons; over 10 tons, free

Queensland Exploration Co., Limited (Cloncurry, Queensland):—

Copper—Price paid is London quotation for standard, 3 months, on wet assay less 2 units. Returning charge is 5s. per unit when standard copper is £55 per ton, with 9d. per unit added for every £5 rise, and 1s. deducted for every £5 fall. Smelting costs are provided for in the above terms.

Payments—On agreement of assays.

Note—Bismuth and antimony ores not accepted.

Chillagoe Company, Limited (Chillagoe, Queensland):—

Gold—£4 per oz., less 5 per cent. in copper or lead ores.

Silver—Standard quotations, less 5 per cent. in copper or lead ores.

Copper—Pay on result of wet assay less 1·3 units, less realization charge, which is, with copper between £40 and £50, 2s. 11d. per unit; between £50 and £60, 3s. per unit; and one penny increase for every £10. Smelting charge varies from £1 to £1 10s. per ton.

Lead—Pay on wet assay, less 15 per cent. on current price of soft Spanish lead, less fixed realization charge of £4 10s. per ton, plus 4¾ per cent. of current price. Smelting charge is generally from 30s to 40s. per ton, and sometimes higher if objectionable impurities are present. Bismuth in lead ores are penalized at the rate of 2s. 10d. per lb.

Payments—On agreement of assays.

Note—The Company quotes the above terms for small parcels of ore, but a fixed tariff is out of the question, as the ores treated are so variable in recoverable metals and in composition

Sulphide Corporation, Limited (Cockle Creek, N.S.W.):—

Gold—£4 per oz., full fire assay less 1 dwt.

Silver—London standard quotations, full fire assay less 5 per cent., with minimum deduction of 1 oz. per ton.

Lead—London quotation for soft lead, less 50s. per ton. One unit deducted from full wet assay, and 90 per cent. of balance is paid for. Minimum paid for, 1 unit. Smelting charge varies from a nominal sum for specially clean fluxing ores, with penalties for impurities. No returning charges.

Penalties—Zinc and antimony, 1s per ton for every unit over 5 per cent. Sulphur, 1s. per ton for every unit over 5 per cent., with maximum penalty of 12s. per ton. Arsenic, 1s. per ton for every unit over 2 per cent., with maximum penalty of 12s. per ton. Bismuth and other ores as arranged.

Premium—Excess of iron (calculated as metallic over insoluble) in basic ores is allowed for at 3d. per unit.

Sampling—A charge of £1 when under 10 tons; over 10 tons free.

Note: Special terms are in nearly all cases quoted for large regular consignments, or for ores which, on account of their composition, may be specially valuable to the smelters. The right to refuse certain classes of ores is also reserved by the smelting companies.

Taringa, 4 miles (by rail) S.S.W. of Brisbane. *Min.Ref.* Halloysite, *see* 4664.

Tarko Bore. *See under* Artesian Bores. No. 169.

Taromeo, N.N.W. of Kannangur, Brisbane Valley Br. Rail. line. *Lat.*, 26° 50′ S.; *Long.*, 152° 10′ E. *Min.Ref.* Copper, *see* 1855A; Copper (native), 2008; Copper Oxide, 2051, 2052; Gold, 4203-4205; Iron Pyrites, 5340; Ironstone, 5608; Malachite, 6346, 6347; Rutile, 7336; Silver 7508, (native) 7562. *See also under* Govt. Ming. Jour., Special Report No. 1.

Taromeo Cr., Taromeo. *Min.Ref.* Iron Pyrites, *see* 5340.

Tarong Estate, 10 miles N.W. of Cooyar. *Min.Ref.* Tripolite, *see* 7024A.

Taroom, 90 miles N.byW. of Miles Rail. Stn. (Western line). *Lat.*, 25° 38′ S.; *Long.*, 149° 47′ E. *Min.Ref.* Coal, *see* 1679; Hyalite, 7016.

GEOLOGICAL NOTE: Coal Measures abound in the district. To the north there are the Dawson Coal Measures (Permo-Carboniferous); and to the south the Walloon Formation (Trias-Jura), but the boundaries of the two series in this locality are not well defined. *See* G.S.Q. Pub. No. 212 for map.

—— Bore. *See under* Artesian Bores. No. 408.

Tarramba Run, Dawson R., S.S.W. of Rockhampton. *Min.Ref.* Copper, *see* 1850.

Tarrant and Flatau's Bismuth Mine, Sellheim Mineral Field. *Min.Ref.* Bismutite, *see* 408.

Tartana Hill, Ashtonville. *Min.Ref.* Azurite, *see* 202B; Cerussite, 1216A; Cuprite, 2443A; Ironstone, 5537A; Malachite, 6248; Tetrahedrite, 7768. *Discovery:* By John Munro about September, 1899. First lease, September 28, 1899.

Tasmania Gully, Hamilton Goldfield. *Min.Ref.* Gold (alluvial), *see* 3211.

—— Mine, Mt. Hogan, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3792.

—— ——, Coolgarra. *Min.Ref.* Cassiterite, *see* 1055; Hematite, 4730; Penninite, 7062.

—— ——, Gum Cr., S.byE. of Petford. *Min.Ref.* Cassiterite, *see* 937.

—— ——, Thompson Cr. Tin Mines. *Min.Ref.* Cassiterite, *see* 1147.

—— Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

—— ——, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Tatala Lease Bore. *See under* Artesian Bores. No. 409.

Tate Co. Cook Dist. *See map*, Pl. 8.

Tate Goldfield, 32 miles W. of Almaden Rail. Stn. (Chillagoe line). *Min.Ref.* Gold (alluvial), *see* 3203. *Statistics: Included in* "Other Goldfields."

GEOLOGICAL NOTE: The country is made up of schistose sandstones and mica schist, with diorite and pegmatite dykes. Several quartz reefs occur on the field, mostly barren, but occasionally very rich in gold. *See* G.S.Q. Pub. No. 119 for details and map.

Tate River. Heads in the country between Koorboora and Ord Rail. Stn. (Chillagoe and Mt. Garnet lines), and flows westerly to join the Lynd River. Principal tributaries—Rocky Tate R., Sandy Tate R., and California Cr. Length, about 80 miles. Fisherton is the mining centre of the Tate River, *which see.* The rocks about Fisherton are quartzites and schists, in which there are lode deposits containing tin and wolfram.

MINERAL REFERENCES: Amethyst, *see* 7166; Barytes, 269; Biotite, 303; Bismutite, 393; Cassiterite (tin), 939-940; Chalcedony, 1385; Gold, 3669; Lepidolite, 5733; Orthoclase, 7038A; Pleonaste, 7585; Ruby, 2359; Rutile, 7328; Sphene, 7573; Spinel, 7575; Wolfram, 7965; Zircon, 8219.

—— and Lynd Rivers (between). *Min.Ref.* Bronzite, *see* 438; Hypersthene, 4877.

—— (Orimo) River, Brit. New Guinea. *Min.Ref.* Coal, *see* 1831.

Taupota, Brit. New Guinea. *Min.Ref.* Limestone, *see* 714; Marble, 603.

Taylor's Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 229.

—— Lease, Grass Tree Goldfield. *Min.Ref.* Gold, *see* 4115.

—— Siding (Crow's Nest line), 24 miles N. of Toowoomba. *Min.Ref.* Coal, *see* 1625B.

Tea Tree Bore. *See under* Artesian Bores. No. 141.

Technical Colleges in Queensland (those in which mining subjects are taught).

SUBJECTS.

BUNDABERG—Inorganic Chemistry, Machine Drawing and Design.

CENTRAL (BRISBANE)—Inorganic Chemistry, Metallurgy, Assaying, Geology, Mineralogy, Machine Drawing and Design, Mechanics, Steam and Heat Engines, Engineering Shop Practice, Blacksmithing, Boilers and Boiler-making, Woodturning, Pattern-making, Engine Driving.

CHARTERS TOWERS—Machine Drawing and Design, Mechanics, Steam and Heat Engines, Engineering Shop Practice, Woodturning, Engine Driving.

GYMPIE—Machine Drawing and Design.

IPSWICH—Inorganic Chemistry, Geology, Mineralogy, Coal Mining, Machine Drawing and Design, Steam and Heat Engines, Engineering Shop Practice, Blacksmithing.

MACKAY—Inorganic Chemistry.

MARYBOROUGH—Inorganic Chemistry, Machine Drawing and Design, Steam and Heat Engines.

MOUNT MORGAN—Inorganic Chemistry, Assaying, Machine Drawing and Design, Mechanics, Steam and Heat Engines, Engineering Shop Practice, Blacksmithing, Engine Driving.

ROCKHAMPTON—Inorganic Chemistry, Assaying, Metallurgy, Machine Drawing and Design, Engine Driving.

TOOWOOMBA—Machine Drawing and Design.

TOWNSVILLE—Machine Drawing and Design, Engine Driving, Engineering Shop Practice.

WARWICK—Inorganic Chemistry, Geology.

Teebar Copper Mines, Munna Creek, 2 miles S. of Boompa Rail. Stn. *Min.Ref.* Azurite, *see* 260; Copper Pyrites, 2329; Cuprite, 2486; Malachite, 6385; Pinite, 7067; Redruthite, 7310; Tile Ore, 2572.

GEOLOGICAL NOTE: The country rock is granite impregnated with copper. *See* G.S.Q. Pub. No. 179 for note.

Teesdale, 10 miles (by rail) S.W. of Einasleigh. *Min.Ref.* Copper Ore, *see* 2025A; Copper Pyrites, 2151B; Magnetite, 5986A.

Tego Bore. *See under* Artesian Bores. No. 422.

Telegraph Bore. *See under* Artesian Bores. No. 185.

—— Mine, Georgetown, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3731.

—— Reef, Thane's Cr. Goldfield. *Min.Ref.* Gold, *see* 3869; Mispickel, 6733.

Telemon Run Bores. *See under* Artesian Bores. No. 410.

Telford's Sub-artesian Bore. *See under* Artesian Bores. No. 318.

7698. **Telluride of Gold.** *Assoc.with* Native Gold, Bismuth, Bismuthinite, Joseite, Copper Pyrites, Malachite, Molybdenite, Mispickel, Zinc Blende, and Calcite. *Loc.* Mt. Shamrock Mine, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.Q. Pubs. 60, p. 6 (1890), 125 (1897), and 168 (1901); and B.D.

7699. —— ——. *Loc.* Mt. Venus P.A., near Mt. Shamrock, 4½ miles W. of Biggenden Rail. Stn. (Gayndah line), 58 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* B.D.

7700. **Telluride Ore,** containing Gold. *Loc.* Mt. Hogan Goldfield, 14 miles N.E.byE. of Gilberton, 44 miles S.E.byS. of Charleston Rail. Stn. (Etheridge line). *Co.* Percy; *Dist.* **Cook.** *Ref.* G.S.M.

7701. —— ——, containing Gold. *Loc.* Colley's Lord Roberts Mine, Gilberton, 24 miles S.byE. of Charleston Rail. Stn. (Etheridge line). *Co.* Victor; *Dist.* Cook. *Ref.* G.S.M.

7702. —— of Gold and Silver. *Loc.* Morris and Colley's Claim, Gilberton Leaders, Gilberton, 48 miles S.byE. of Charleston Rail. Stn. (Etheridge line). *Co.* Victor (*ante*). *Analysis:* (by G. E. Jewell)—

Silicon	24·19 per cent.	Sulphur	1·25 per cent.
Lead	24·31 ,,	Carbon	1·17 ,,
Oxygen...	37·38 ,,	Silver	2·01 ,,
Zinc	2·50 ,,	Gold	0·97 ,,
Iron	3·16 ,,	Hydrogen } as H_2O { ...	·03 ,,
Aluminium	·32 ,,	Oxygen } as H_2O { ...	·20 ,,
Tellurium	2·47 ,,		
		Total	99·96 per cent.

Probable Compo.: (by G. E. Jewell)—$(SiO_2)_3$ $(Al_2O_3)_2$ Singulo-silicate of Aluminium. PbS—Galena. Ag_4AuTe_4—Gold-silver Telluride. ZnS—Zinc Blende. FeS_2—Iron Pyrites.

Ref.:—Mining Record, Croydon, 21-8-1903.

7702A. —— —— ——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in calcite and quartz. *Loc.* Anglo-Saxon Mine, Mt. Usher, 6 miles N.E. of Mt. Morgan Rail. Stn., 30 miles S.S.W. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* O.R.

7703. —— (?) Ore. *Assoc.with* Native Copper, Cuprite, and Ironstone, in schist. *Loc.* Stanage Point, 37 miles E.N.E. of St. Lawrence. *Co.* Palmerston; *Dist.* Port Curtis. *Ref.* B.D.

7704. —— —— (as Hessite and Altaite). Contains Gold, Silver, and Lead. *Loc.* Gt. Eastern 2 S. Mine, Gympie Goldfield, 106 miles (by rail) N.byW. of Brisbane (North Coast line). *Co.* March; *Dist.* **Wide Bay.** *Assay:* Gold = 130 oz. 16 dwt. per ton, Silver = 3,339 oz. 3 dwt. 8 gr. per ton, Tellurium = 5·26 per cent. *Ref.* G.S.Q. Pubs. 175 (1902), 196 (1905), and G.S.M.

7705. —— —— (grey). Contains Gold, in quartz reef. *Loc.* Gt. New Zealand 1 N. Lease (849), Gympie Goldfield. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 100, p. 16 (1894).

Tellurides. *See* Joseïte, Tetradymite (bismuth); Calaverite (gold); "Telluride of Gold and Silver"; Altaite (lead); Hessite (Silver). *See under* Tellurium for notes.

Tellurium (Te.). *Atom. Wt.* = 127·5; *Sp.gr.* = 6·26. *Colour,* white-metallic.

Minerals: *See* "Telluride of Gold," "Telluride Ore," Altaite, Calaverite, Hessite, Joseïte, Tetradymite.

Mineral Note: Associated minerals include Mispickel, Zinc Blende, Copper Pyrites, Native Bismuth, Bismuthinite, Iron Pyrites, etc., the most interesting occurrence being Joseïte at the Mt. Shamrock Gold Mine, in association with Native Bismuth and Native Bismuth-Gold.

Geological Note: The telluride of bismuth, Joseïte, at Mt. Shamrock, occurs in veins of Mispickel, Bismuthinite, and Iron Pyrites, with Calcite (Quartz being absent), the associated rocks being mudrock, felsite, diorite, and volcanic breccia belonging to the Gympie Formation (Permo-Carboniferous).

Uses: The metal tellurium has no commercial uses, and its presence is undesirable in ores which are to be treated for gold and silver. Bullion contaminated with it has a tendency to become granulated in cupelling operations.

7706. —— (scales). *Assoc.with* Gold, in quartz vein. *Loc.* Lucky Valley Goldfield, 10 miles S.E. of Warwick. *Co.* Merivale; *Dist.* **Darling Downs.** *Ref.* D.H.A.

Templeton's Sel., nr. Aldershot. *Min.Ref.* Coal, *see* 1818B.

Ten Men's Gully, Calliope Goldfield. *Min.Ref.* Gold (alluvial), *see* 3385.

Tenham Station, near Junction of Kyabra and Cooper's Creeks. *Min.Ref.* Topaz, *see* 7796A; Meteorites, 6551E.

Ten-mile Pikedale Cr., Stanthorpe. *Min.Ref.* *See* Pikedale Cr.

Ten-mile Bores. *See under* Artesian Bores. Nos. 348, 363.

—— —— Cr., Stanhills Tin Field. *Min.Ref.* Azurite, *see* 158; Cassiterite, 765-770; Chlorite, 1420; Copper Pyrites, 2068; Galena, 2690; Malachite, 6089, 6090; Molybdenite, 6814; Wolfram, 7927; Zinc Blende, 8051.

—— —— ——. (*See* Pikedale Cr., Stanthorpe.)

Tenningering (Mt. Perry) **Gold and Mineral Field**—

SITUATION: Mt. Perry is 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* Burnett. Centre about *Lat.* 25° 14′ S.; *Long.* 151° 41′ E.

POPULATION: 2,240 (estimated by Warden, 1912).

PROCLAMATION OF FIELD: First (and only one) gazetted, 19th April, 1883, as follows:—Starting from the north-west corner of Tenningering Suburban Area; thence north-westerly by the western boundary of that portion of Tenningering Town Reserve proclaimed 2nd November, 1874, *Government Gazette,* 1874, folio 2133, about five miles; thence westerly by part of the north boundary of the present Tenningering Town Reserve to its termination at north-west corner, about two miles; thence south by the western boundary of present Town Reserve, six and a-half miles; thence easterly to the north-west corner of Normanby Goldfield, two miles; thence by northern boundary of said goldfield to top of Normanby Range, four miles; thence by the watershed of said range to the point of commencement, about four miles.

AREA: 22,720 acres = 35½ square miles.

LEASES: Gold-mining Leases and Applications in force, 2; area, 50 acres. Mineral Leases and Applications, 5; area, 250 acres. Miners' Homesteads and Applications, 36; 327 acres (1912).

PRINCIPAL MINING CENTRES: Boolboonda, Gaeta, and Reid's Creek Goldfields; Harper's Hill, Mount Perry, and Normanby, *which see.*

MINERAL STATISTICS: *Included in* Mt. Perry returns.

MINERAL REFERENCES: Gold, 3585; Silver, 7430-7433; Cinnabar, 1541; Lead (Galena), 2718-2723; Copper (Atacamite) 128, (Azurite) 174-176, (Bornite) 416, (Chalcotrichite) 2489, Native Copper, 1989, (Copper Ore) 2021-2023, (Copper Pyrites) 2124-2130, (Cuprite) 2417-2419, (Malachite) 6190-6194, (Redruthite) 7274, (Tenorite) 7713, 7714, (Tetrahedrite) 7759, (Tile Ore) 2544; Molybdenite, 6818; Manganese (Psilomelane), 7081; Zinc Blende, 8062-8065; Iron (Ilmenite) 4883, (Iron Pyrites) 4985-4993A, (Magnetite) 5974, (Mispickel) 6650-6654, (Siderite) 7405. Other Minerals—Calcite, 471-473; Clay, 1568; Jasper, 5663; Lithomarge, 5708; Tourmaline, 7819-7821.

GEOLOGICAL NOTE: A belt of granite some miles in extent exists in this region, in association with gneiss, schist, slate, and intrusive masses of felsite, etc. At Mt. Perry a mass of felsite sends out veins into the schist, etc., and is itself intruded by diorite. Several gold-bearing reefs and copper lodes occur in the granite, of which the most noted is the Mt. Perry copper lode. *See* G.S.Q. Pub. No. 21 for details.

GEOLOGICAL PUBLICATIONS: Report No. 21 (1885). *See under* Geol. Surv. Pub. List for title.

WARDEN: Stationed at Mt. Perry; INSPECTOR OF MINES: Stationed at Rockhampton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Tennyson Tin and Silver Mine, Koorboora. *Min.Ref.* Cassiterite, *see* 947A; Galena, 2799; Silver, 7461.

Tenorite. *Syn.* Melaconite, Black Copper. *Compo.,* Oxide of Copper. *Colour,* black. Usually dull and earthy. *H.* = 0·3; *Sp.gr.* = 6·25. *Contents (max.),* Copper 79 per cent.

7707. ——. *Assoc.with* Native Copper, Cuprite, and Calcite. *Loc.* Dugald Mine Dugald R., 45 miles N.W. of **Cloncurry.** *Co.* Argylla; *Dist.* **Burke.** *Ref.* P.R.S.Q., vol. 4, p. 73 (1887).

7708. ——*Assoc.with* Native Copper, Cuprite, Tetrahedrite, Malachite, and Iron Pyrites, in lode. *Loc.* Gt. Australian M.F., Queensland Exploration Co., 1 mile S. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p 14 (1885); 215, pp. 242-250 (1908); and B.D.

7709. ——. *Assoc.with* Cuprite, Azurite, and Malachite, in ferruginous quartzite. *Loc.* Ma Foi M.L. (508), Gt. Australian Group, Cloncurry Township. *Co.* Beaconsfield (*ante*). *Ref.* G.S.Q. Pub. 215, p. 253 (1908).

7710. ——. *Assoc.with* Copper Pyrites, in quartz and ironstone. *Loc.* Daisy United M.C. (155), Duck Cr., 1½ mile N.N.W. of Mt. Start, 22 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* A.R., p. 117 (1907)

7711. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Malachite, Chrysocolla, Iron Pyrites, and Kaolin, in gossan, slates, and diorite. *Loc.* Hampden M.Ls. (244, 245, etc.), Hampden Group, 40 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 49-60 (1908).

7712. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Cuprite, Tile Ore, Malachite, Iron Pyrites, and Limonite, in slate and gossan. *Loc.* Mt. Metallic R.C. (310), Mt. Metallic Group, Prospector Cr., trib. of Leichhardt R., 52 miles W.N.W. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Assay: See* No. 2115. *Ref.* G.S.Q. Pub. 215, pp. 295-297 (1908).

For further Cloncurry references, *see* Nos. 7725-7727.

7713. ——. *Assoc.with* Copper Pyrites and Bornite. *Loc.* Mt. Perry Copper Mine, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* P.R.S.Q., vol. 4, p. 57 (1887).

7714. ——. *Assoc.with* Copper Pyrites and Iron Pyrites. *Loc.* Normanby Copper Mine, Mt. Perry (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and G.S.M.

7715. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Pyrrhotite, Copper Pyrites, Cuprite, Malachite, Bismuthinite, Zinc Blende, Hematite, and Calcite, in quartz lode. *Loc.* Commonwealth Mine, Mt. Havilah, 2¾ miles S.S.W. of Degilbo Rail. Stn. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 185, p. 6 (1903), and 207, pp. 14-19 (1907).

7716. ——. *Assoc.with* Copper Pyrites, Galena, Mispickel, and Iron Pyrites. *Loc.* P.A. (No. 2), Gympie Copper Mines, Gooroomjam Cr., 23 miles N.N.E. of Nanango, 30 miles S. of Kilkivan Rail. Stn. *Co.* Fitzroy; *Dist.* Burnett. *Assays: See* No. 2139. *Ref.* G.S.Q. Pub. 169, p. 9 (1901).

7717. ——. *Assoc.with* Cuprite, Azurite, and Malachite, in dyke rock. *Loc.* Monument Block Lease, Mt. Cannindah, 40 miles S.W. of Miriam Vale Rail. Stn., 85 miles (by rail and road) S. of Gladstone. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pubs. 113, p. 8 (1896), and 143, p. 4 (1899).

7718. ——. *Assoc.with* Gold, Silver, Native Copper, Cuprite, Azurite, and Malachite. *Loc.* Mt. Cannindah Mine, Mt. Cannindah (*ante*). *Ref.* G.S.Q. Pub. 113, p. 7 (1896).

7719. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Young Wexford Mine (Wexford Reef), ¾-mile N. of Georgetown, Etheridge Goldfield. *Co.* Gilbert; *Dist.* **Cook.** *Ref.* G.S.M. and G.S.Q. Pub. 161, p. 6 (1900).

7720. ——. North Australian Mine, Watsonville, 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe Br. line), **Walsh and Tinaroo** Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook.

7721. ——. *Assoc.with* Cassiterite, Wolfram, and Molybdenite, with traces of Iron Pyrites, Hematite, Limonite, and Scorodite, in veins of coarse mica and quartz, in greisan. *Loc.* California Cr., nr. Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

7722. ——. *Assoc.with* Cuprite, Tile Ore, Malachite, Azurite, Chrysocolla, Magnetite, and Hematite. *Loc.* Boomerang Copper Mine, Marble Cr., 1 mile W. of Calcifer Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 8 (1891); 119, p. 36 (1897); and G.S.M.

7723. ——. *Assoc.with* Copper Pyrites, Bornite, Tetrahedrite, Cuprite, Tile Ore, Malachite, Atacamite, Iron Pyrites, and Hematite, in quartz lode, in felspar. *Loc.* Ruddygore Copper Mine, Arbinjoe Cr., 2 miles N.E. of Chillagoe Rail. Stn., 141 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 10, 11 (1898).

7724. ——. *Assoc.with* Copper carbonate and Hematite, in lode. *Loc.* Oruba Mine, 2 miles E. of Zillmanton (Chillagoe line), 144 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, p. 9 (1898). *See* 7728, etc., for other Walsh and Tinaroo references.

7725. ——. *Assoc.with* Redruthite, Tile Ore, Malachite, Iron Pyrites, and Limonite, in kaolinised slate and gossan. *Loc.* Labour Victory Mine, Agate Downs Group, Maggie's Cr., 53 miles S. of Cloncurry. *Co.* Merlin; *Dist.* **Gregory North.** *Ref.* G.S.Q. Pub. 215, pp. 12-14 (1903).

7726. ——. *Assoc.with* Gold, Cuprite, Tile Ore, Malachite, Atacamite, Chalcanthite, Iron Pyrites, Limonite, Calcite, and Chalcedony, in kaolinised slate and gossan. *Loc.* Mt. Elliott Copper R.C. (3, etc.), Mt. Elliott Group, Maggie's Cr., 58 miles S. of Cloncurry. *Co.* Merlin (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 3-12 (1908).

7727. Tenorite. *Assoc.with* Cuprite and Malachite, in quartz. *Loc.* Mt. Elliott, 58 miles S. of Cloncurry. *Co.* Merlin (*ante*). *Ref.* A.R., p. 118 (1907).

For further Cloncurry references, *see* Nos. 7707-7712.

7728. ——. *Loc.* Anniversary Copper Mine, Herberton, 12 miles S.S.W. of Atherton Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.**

7729. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Bornite, Cuprite, Azurite, Malachite, Chalcanthite, Iron Pyrites, Mispickel, Hematite, Magnetite, Zinc Blende, Cerussite, and Minium, in quartz lodes in quartzite and porphyry. *Loc.* Mt. Garnet, Return Cr., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

7730. ——. *Assoc.with* Gold, Copper Pyrites, Iron Pyrites, Malachite, Mispickel, and Zinc Blende. *Loc.* Buck Reef, Ravenswood Goldfield, 78 miles (by rail) S. of Townsville (Gt. Northern line). *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 76 (1887).

7731. ——. *Assoc.with* Copper Pyrites, Bornite, Cuprite, Copper carbonate, Iron Pyrites, Ironstone, Galena, and Zinc Blende, in lode. *Loc.* Mt. Thekla Copper Mine, 4 miles N. of Ewan, Kangaroo Hills Mineral Field, 44 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Assays: See* No. 425. *Ref.* G.S.Q. Pub. 167, p. 7 (1901).

7732. ——. *Assoc.with* Gold and Malachite, in quartz. *Loc.* Excelsior Mine, Star R. Mineral Field, 50 miles (by road) N.W. of Ravenswood Junction. *Co.* Wilkie Grav; *Dist.* Kennedy North. *Ref.* G.S.M.

7733. ——. *Assoc.with* Cuprite and Azurite. *Loc.* Kennedy Copper Mine, Sandy Cr., Star R. Mineral Field (*ante*). *Ref.* P.R.S.Q., vol. 4, pp. 56, 77 (1887).

7734. ——. *Assoc.with* Gold, Copper Pyrites, Tetrahedrite, Malachite, Azurite, Galena, and Ironstone. *Loc.* Pine Vale Copper Mine, Pine Vale Cr., Pioneer R., 9 miles S.byE. of Eton Rail. Stn., 32 miles (by rail and road) S.byW. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), and 229, pp. 12-17 (1910).

7735. ——. *Assoc.with* Native Copper, in quartz. *Loc.* Peak Downs Copper Mine, Copperfield, 4 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* Q.M.

7735A.——. *Assoc.with* Copper Pyrites and Iron Pyrites, in granite. *Loc.* Flora Copper Lode (in MacFadzen's M.L., 1749), Mt. Flora Gold and Mineral Field, 70 miles S.W. of Mackay. *Co.* Killarney; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 228, p. 34 (1910).

7736. —— *Assoc.with* Redruthite and Copper carbonate, in slate country. *Loc.* Balcomba Range, 24 miles N. of Duaringa Rail. Stn. (Central line), 90 miles (by rail and road) W. of Rockhampton. *Co.* Leura; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 159, p. 20 (1901).

7737. ——. *Assoc.with* Copper Pyrites, Azurite, Malachite, and Hematite. *Loc.* Mt Orange Copper Mines, nr. Annandale Stn., 75 miles W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* P.R.S.Q. vol. 4, pp. 52, 77 (1887).

7738. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, Galena, and Zinc Blende, in altered sedimentary rocks. *Loc.* Gt. Pyramid Mine, 12 miles N. of Esk Rail. Stn. (Brisbane-Valley Br. line), 79 miles (by rail and road) W.N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.Q. Pub. 169, p. 6 (1901).

7739. ——. *Assoc.with* Copper Pyrites, Cuprite, Bornite, Malachite, Azurite, Galena, Zinc Blende, Hematite, Magnetite, Garnet, Chlorite, and Calcite. *Loc.* Glassford Cr. Copper Mines, Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne Valley line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pubs. 150, pp. 5-7 (1900), and 194, p. 28 (1904).

7739A.——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Bornite, Cuprite, Azurite, Malachite, and Ironstone, in crystalline limestone, etc. *Loc.* Mt. Hector Copper Mine, E. side of Dawes Range, 60 miles S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* Q.G.M. Jour., vol. 4, pp. 174-177 (1903).

7740. ——. *Assoc.with* Gold and Redruthite, in quartz. *Loc.* Alliance Mine, Morinish Goldfield, 29 miles N.W. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* P.R.S.Q. vol. 4, p. 57 (1889).

7741. ——. *Assoc.with* Silver, Cuprite, Malachite, Cerussite, Iron Pyrites, Zinc Blende, and Barytes, in serpentinous shales. *Loc.* Mt. Warminster Copper-Lead Mine, nr. Mt. Chalmers, 20 miles (by rail) N.E. of Rockhampton, Cawarral Goldfield. *Co.* Livingstone (*ante*). *Ref.* B.D.

7742. ——. In dyke rock. *Loc.* United Copper Mine, Moonmera, nr. Moonmera Rail. Stn., 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Assay:* Gold = trace, Silver = 2 dwt. per ton; Copper = 0·2 per cent, *Ref.* A.R., p. 85 (1907).

7743. ——. *Assoc.with* Gold, Silver, and Iron Pyrites, in quartz. *Loc.* Stony Ridge, Black Snake, 10 miles S. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.M.

7744. ——. *Assoc.with* Copper Pyrites, Redruthite, Cuprite, Azurite, Malachite, Iron Pyrites, Hematite, and Limonite, in lodes in syenitic granite. *Loc.* Calgoa Copper Mines, Thunder Cr., 15 miles N.byW. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 207, p. 5 (1907).

7745. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Zinc Blende, Calamine, and Copperas, in quartz reef. *Loc.* Beer and Dawson's Lease, one mine E. of Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 8 (1902).

——. *See also* minerals classed as "Copper Oxide."

Tent Hill Bores. *See under* Artesian Bores, No. 226.

Tent Hill Silver-lead Deposits. *See under* Emu Plains Mineral Field.

Tenthill Creek, br. of Lockyer Cr., Gatton. *Min.Ref.* Coal, *see* 1724.

Terra Cotta. Clays for the manufacture of Terra Cotta are being mined at Strathpine.

Terraces, Russell Goldfield. *Min.Ref.* Cassiterite, *see* 964; Gold (alluvial), 3228-3230; Ironstone, 5532; Limonite, 5847; Opal (wood), 7003; Platinum, 7072.

Terrick Terrick Lease Bore. *See under* Artesian Bores. No. 411.

Teste (Ware) Island, Brit. New Guinea. *Min.Ref.* Limestone, *see* 715.

Testing Samples for Prospectors. *See under* Assaying Mineral Samples.

Tetradymite. *Syn.* Telluric Bismuth. *Compo.*, Telluride of bismuth. *Colour*, steel-grey. Metallic. Micaceous. *H.* = 1·5-2; *Sp.gr.* = 7·2-7·6. *Contents* (*max.*), Bismuth 59 per cent.

7746. ——. *Assoc.with* Magnetite and Bismuthinite. Don Jon (Unique) Mine, Mt. Havilah, 2¼ miles S.S.W. of Degilbo. *Co.* Cook; *Dist.* Burnett. *Assay:* Gold = 14 dwt. 4 gr., Silver = 2 oz. 17 dwt. 9 gr. per ton; Bismuth = 32·0 per cent. *Ref.* A.R., p. 44 (1906).

7747. —— (so-called). *See* Joseïte, 5668.

7748. ——. *Assoc.with* Stibnite. *Loc.* Struck Oil Gold Mine, Dee River, 5 miles E. of Mt. Morgan Rail. Stn., Mt. Morgan Goldfield. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.M.

7749. ——. Containing 52 per cent. of Bismuth, in oxidised ore. *Loc.* Open Cut, Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton, Mt. Morgan line. *Co.* Raglan (*ante*). *Ref.* A.R., p. 357 (1911).

Tetrahedrite. *Syn.* Fahlerz, Grey copper Ore. *Compo.*, Sulphide of copper and antimony. *Colour* and *Streak*, greyish black. *Lustre*, metallic. *H.* = 3-4·5. *Sp.gr.* = 4·4-5·1. *Contents* (*max.*), Copper 52 per cent., Silver from a trace to 30 per cent.

7750. ——. *Assoc.with* Cuprite and Malachite, in quartz reef. *Loc.* Argylla Copper Mine, Argylla Cr., 40 miles W. of Cloncurry. *Co.* Argylla; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 10, p. 7 (1885).

7751. ——. *Assoc.with* Native Copper, Cuprite, Copper Pyrites, Malachite, and Iron Pyrites, in lode. *Loc.* Gt. Australian Copper Mine, Gt. Australian Group, Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 14 (1885), 215, pp. 242-250 (1908), and B.D.

7752. ——. *Assoc.with* Gold and Copper carbonate. *Loc.* Flying Dutchman Mine, Pumpkin Gully, 12 miles E. of Cloncurry. *Co.* Beaconsfield (*ante*). *Assay:* Gold = 1 oz. 3 dwt. per ton. *Ref.* G.S.Q. Pub. 10, p. 4 (1885).

7753. ——. *Assoc.with* Cuprite, Malachite, Chalcostibite, and Hematite, in copper lode. *Loc.* Pumpkin Gully (*ante*). *Ref.* G.S.Q. Pub. 10, p. 4 (1885), and P.R.S.Q., vol. 4, p. 54 (1887).

7754. Tetrahedrite. *Assoc.with* Cuprite, Malachite, and Stibnite, in quartz. *Loc.* Rainbow M.L. (2454) (Boomerang Group), Cone Cr., 2½ miles N.byE. of Mt. Start, 23 miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 5 (1885), 215, p. 102 (1908)

7755. ——. *Assoc.with* Copper Pyrites. Cuprite, Malachite, and Antimony. *Loc.* Rainbow Copper Lode, Boomerang Group (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 56 (1887).

7756. —— (?). *Assoc.with* Copper carbonate and Hematite, in chloritic slate. *Loc.* Sel. 2458, 2 miles W.N.W. of Chinaman's Lode, Duck Cr., 23½ miles S.S.W. of Cloncurry *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 10, p. 5 (1883).

7757. ——. *Assoc.with* Cuprite and Malachite, in ironstone *Loc.* Malbon Copper Mine, Just-in-Time Group, 30 miles S.S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Assay:* Copper = 51·9 per cent.; Gold = 19 gr., and Silver = 1 oz. 8 dwt. per ton. *Ref.* A.R., p. 117 (1907).

7758. ——. *Assoc.with* Native Copper, Cuprite, Redruthite, Malachite, Iron Pyrites, Magnetite, Hematite, and Limonite, in quartz and schist. *Loc.* Crusader M.F. (2549), Crusader Group, Coolullah, 68½ miles N.W.byW. of Cloncurry. *Co.* Tewinga; *Dist.* Burke. *Ref.* G.S.Q. Pubs. 10, p. 8 (1885). 215, pp. 334-335 (1908).

7759. ——. *Assoc.with* Cuprite, in lode. *Loc.* Mt. Perry Copper Mine, Mt. Perry, 67 miles (by rail) S.W.byS. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref* G.S.Q. Pub. 21, p. 12 (1885).

7760. ——. *Assoc.with* Gold, Cuprite, Azurite, Malachite. Chalcanthite, and Ironstone, in lodes in gneiss and schist. *Loc.* Arbouin Mines, between Nondah Cr. and Walsh R., **Walsh and Tinaroo** Mineral Fields. *Co.* Bolwarra; *Dist.* **Cook.** *Ref.* G.S.Q Pub. 134, p. 13 (1898).

7761. ——. *Assoc.with* Silver, in pipe vein. *Loc.* Lady Jane Mine, Montalbion, 7 miles S.W. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 119, p. 29 (1897).

7762. ——. *Assoc.with* Cuprite, Minium, Malachite, and Hematite, in lode. *Loc.* Mollie Lease, Marble Cr., Calcifer, 132 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Assays:* Copper = 30 and 10 to 15 per cent.; Silver = 20 to 30 oz., and 20 to 40 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 8 (1891).

7763. ——. *Assoc.with* Copper Pyrites, Bornite, Cuprite, Tile Ore, Tenorite, Malachite, Atacamite. Iron Pyrites, and Hematite, in quartz lode. *Loc.* Ruddygore Copper Mine, Arbinjoe Cr., 2 miles N.E. of Chillagoe, 141 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 7 (1891), 134, pp. 10, 11 (1898).

7764. ——. *Assoc.with* Cerussite, Malachite, Galena, and Zinc Blende, in lode. *Loc.* Eclipse Mine. 7 miles W.S.W. of Muldiva Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Silver = up to 400 oz. per ton. *Ref.* G.S.Q. Pub. 69, p. 5 (1891).

7765. ——. *Assoc.with* Native Copper, Cuprite, Malachite, Azurite, Manganese-dioxide, Hematite, and Selenite, in lode. *Loc.* Griffith Lease, Julia Cr., 2 miles S.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 5 (1891), 134, p. 12 (1892), and G.S.M.

7766. ——. *Assoc.with* Malachite, in lode. *Loc.* Lady Jane Mine, 1 mile S.E. of Mungana Rail. Stn. (Chillagoe line). 149 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 134, p. 12 (1898).

7767. ——. *Assoc.with* Malachite, Ironstone, Siderite, Limonite, and Manganese-dioxide, in lode. *Loc.* Queenslander Lease, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 7 1891).

7768. ——. *Assoc.with* Cuprite, Malachite, Azurite, Cerussite, and Ironstone, in lode. *Loc.* Tartana Hill, Bowler Cr., Ashtonville, 15 miles N.W. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Wrotham; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, pp. 15, 16 (1898).

7769. ——. *Assoc.with* Copper Pyrites, Bornite, and Malachite. *Loc* Duchess Mine, Jack Cr., Burke R., 65 miles S.W. of Cloncurry. *Co.* Chatsworth; *Dist.* **Gregory North.** *Ref.* G.S.M.

7770. ——. *Assoc.with* Malachite. Azurite. Mimetite. Galena, Hematite, and Limonite, in lode. *Loc.* Mt. Garnet, Return Cr., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 72, p. 5 (1891).

7771.——. Ravenswood Gt. Extd Silver Mine, in shaft at 650-foot level, Ravenswood Goldfield, 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.* Kennedy North. *Analyses:* Copper = 12·67, 16·25; Antimony = 11·38, 26·36; Silver = 7·29, 15·35; Iron = 10·31, 8·49; Zinc = 31·54, 8·75; Sulphur = 24·87, 17·02; Silica = 3·80, 7·31 per cent. *Ref.* P.R.S.Q., vol. 4, p. 54 (1887).

7772. ——. *Assoc.with* Silver. *Loc.* Emu Plains Silver Field, Bowen R., 50 miles S. of Bowen. *Co.* Carlisle. *Dist.* **Kennedy South.** *Assays* (as reported): (1) Silver = 300 to 8,000 oz. per ton; (2) Silver = 1,600 oz. per ton picked ore. *Ref.* G.S.Q. Pub. 54, p. 5 (1889).

7773. ——. *Assoc.with* Native Silver and Bornite, in quartz. *Loc.* Silver King Copper Mine, Eungella Range, 10 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* O.R.

7774. ——. (?) *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Siderite, Mispickel, Ironstone, and Yellow Ochre, in quartz. *Loc.* Grace Darling Lease (11), Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Assay:* *See* No. 4128. *Ref.* G.S.Q. Pub. 88 p. 3 (1893).

7775. ——. *Assoc.with* Gold, Copper Pyrites, Tenorite, Malachite, Azurite, Galena and Ironstone, in quartz lode. *Loc.* Pine Vale Copper Mine, Pine Vale Cr., Pioneer R., 9 miles S.byE. of Eton Rail. Stn., 32 miles (by rail and road) S.byW. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pubs. 53, p. 10 (1889), 229. pp. 12-17 (1910).

7776. ——. *Assoc.with* Malachite and Azurite. *Loc.* Nr. the heads of Balcomba, Paddock, and Ruby Crs., Balcomba Ranges, 24 miles N. of Duaringa Rail. Stn. (Central line). *Co.* Leura; *Dist.* **Leichhardt.** *Ref.* B.D.

7777. ——. Mt. Orange Copper Mine, 75 miles S.W. of Mackay. *Co.* Wodehouse; *Dist.* Leichhardt. *Ref.* P.R.S.Q., vol. 4, p. 54 (1887).

7778. ——. In granite and other igneous rocks. *Loc.* Moonmera Copper Mines, nr. Moonmera Rail. Stn. (Mt. Morgan line), 20 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* **Port Curtis.** *Ref.* B.D.

7779. ——. *Assoc.with* Copper Pyrites, Azurite, Malachite, Galena, Zinc Blende, Iron Pyrites, and Calcite, in slate, diorite, andesite, syenite, and quartzite. *Loc.* Blue Bell Copper Mine, Amamoor Cr., 19 miles S.S.E. of Gympie. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* L.C.B.

7780. ——. In quartz. *Loc.* Sel. (1217), Gigoomgan Run, 35 miles W.S.W. of Maryborough. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59. p. 8 (1890).

7781. ——. *Assoc.with* Cuprite, Malachite, Azurite, and Hematite, in quartz reef. *Loc.* White Rocks Copper Lease, Marodian Goldfield, 8 miles N. of Kilkivan Rail. Stn., 56 miles (by rail and road) N.W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 11 (1902).

7782. ——. *Loc.* 10 chains W. of Ortt's Shaft, Sunnyside, Mudloo, 5 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* L.C.B.

——. *See also* Grey Copper Ore.

Teviot Brook, 2½ miles E.N.E. of Boonah. *Min.Ref.* Clay Ironstone, *see* 1590.

Tewantin (9 miles from) (on Tewantin-Gympie Road). *Min.Ref.* Coal, *see* 1829A.
Rainfall: *See under* separate heading.

Tewinga Co. Burke Dist. *See map,* Pl. 20

Texas, Severn R., Stanthorpe. *See maps,* Pls. 12, 13, 30. *Lat.,* 28° 50′ S.; *Long.,* 151° 10′ E. *Min.Ref.* Anglesite, *see* 38; Calcite, 491; Cerussite. 1217, 1218; Cervantite, 1307; Clay, 1570, 1585; Copper carbonate, 1906; Copper Pyrites, 2195; Cuprite, 2446; Galena, 2838-2841; Gold, 3843; Graphite, 4595; Iron Pyrites. 5117; Ironstone, 5541, 5542; Malachite, 6252-6254; Manganese-dioxide, 6420; Mineral Water, 6569; Pyrargyrite, 7114; Redruthite, 7284; Silver, 7476, (native) 7555; Smithsonite, 7569; Stibnite, 7637; Tile Ore, 2551; Zinc Blende, 8105. *Geological Note.*—Slates of Lower Bowen Formation (Permo-Carboniferous) occur about the town, with interbedded fossiliferous limestones to the north and south. The slates contain lodes carrying gold, silver, lead, and copper.

—— Copper Mine, 2 miles N.W. of Silver Spur, Texas. *Min.Ref.* Copper Pyrites. *see* 2196; Malachite, 6253.

Thargomindah—

Geological Note: The surface rocks in this locality are made up of strata belonging to the Rolling Downs Formation (Lower Cretaceous). Artesian water supplies are obtained by tapping the strata with bores.

Thane's Cr. Goldfield—

Situation: *See maps,* Pls. 12, 13. The field is about 24 miles W. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. Centre about *Lat.* 28° 12′ S.; *Long.,* 151° 50′ E.

Discovery: Alluvial gold was worked here in 1869. The first reef was discovered in 1879.

Population: Under 20.

Proclamation of Field: First gazetted, 9th September, 1864; last alteration gazetted, 25th January, 1882, as follows:—Commencing on the left bank of Thane's Creek where it is intersected by the northern boundary of Rosenthal Run, and bounded thence on the east by that creek upwards five miles in a direct line; thence by a line west to the watershed separating Thane's Creek from Canal Creek; thence by that watershed northerly to the spur ridge forming the northern boundary of the run; and on the north by that northern boundary south-easterly to the point of commencement;—exclusive of all reserved, selected, and alienated land.

Area: 11,000 acres (17 3/16 sq. miles).

Mineral Statistics: Gold. *Included in* "Other Goldfields" *in stat. tables and diagrams,* Pls. 26, 46, 46a, 47.

Mineral References: Gold, *see* 3864-3872; Lead (Galena), 2843; Manganese (Psilomelane). 7088, (Pyrolusite) 7122; Iron (Hematite), 4727, (Iron Pyrites) 5126-5130, (Ironstone) 5543, 5544, (Mispickel) 6733.

Geological Note: The rocks of the field consist mostly of altered slates and quartzites, and contain well-defined gold-bearing quartz reefs. It is many years ago since the reefs were worked.

Geological Publications: Reports Nos. 40 (1887), 120 (1898), 186 (1903), 205 (1906). *See under* Geol. Surv. Pub. List for title; *also under* Supplementary Report List, Nos. 29, 107.

Warden: Stationed at Warwick. Inspector of Mines: Stationed at Gympie.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Thargomindah Bores. *See under* Artesian Bores. Nos. 51, 52.

Tharsis Group of Copper Mines, Cloncurry. *Includes* Brilliant, Waratah, Jones's Surprise, Cleopatra, Tharsis M. Leases. *Min.Ref.* Chrysocolla, *see* 1510; Copper Pyrites, 2097; Iron Pyrites, 4930; Limonite, 5791; Malachite, 6151-6153; Redruthite, 7249, 7250; Tile Ore, 2526, 2527; Turgite, 7882.

—— M.L. (240), Tharsis Group of Mines, Cloncurry. *Min.Ref.* Iron Pyrites, *see* 4930; Malachite, 6152; Redruthite, 7250; Tile Ore, 2526.

"The Falls," Mapleton, 7 miles S.W. of Nambour. *Min.Ref.* Natrolite, *see* 6900.

"The Gap," 1 mile E. of Gayndah. *Min.Ref.* Clay Ironstone, *see* 1594.

"The Glen," Town Common, Warwick. *Min.Ref.* Manganese-dioxide, *see* 6427; Rhodonite, 7319; Rhodochrosite, 7314.

The Gorge, Flaggy Cr., 8 miles S.S.W. of Herberton. *Min.Ref.* Albite, *see* 1.

The Granite, Maytown, Palmer Goldfield. *Min.Ref.* Cuprite, *see* 2426; Malachite, 6212; Tile Ore, 2545.

The Meadow Bore. *See under* Artesian Bores. No. 142.

The Narrows. At 18 miles N.N.W. of Gladstone. *Min.Ref.* Oil-bearing Shale, *see* 6916.

Harbourage: The Narrows are navigable for small steamers during high tide, but some places are almost dry at low tide. Opposite Monte Christo the Narrows are fordable during low tide. Spring tides rise 12 ft. to 15 ft.; neaps, 8 ft. to 11 ft.

Geological Note: Recent alluvial deposits have accumulated in several localities in the channel. The oldest rocks are Devonian quartzites and slates, and over these have been formed small areas of shales and sandstones which are probably a Tertiary formation. *See* G.S.Q. Pub. No. 190, p. 27 (1904).

The Plain Bore. *See under* Artesian Bores. No. 242.

"The Pointers," 13 miles N.W.byW. of Rockhampton. *Min.Ref.* Galena, *see* 3063; Iron Pyrites, 5410; Magnesite, 5962.

"The Spare" Ground, Iguana Hill, Croydon Goldfield. *Min.Ref.* Gold, *see* 3487.

"The Springs," Cape R. Goldfield. Reefs:—The Springs and Golden Hill. *Min.Ref.* Gold, *see* 4057, 4058; Iron Pyrites, 5267; Limonite, 5878.

—— ——, Stewart R., Coen Goldfield. Reefs:—Westralia, Goolha Goolha, Rothwell, and Sirdar. *Min.Ref.* Galena, *see* 2812A; Gold, 3800, 3801.

—— ——, Croydon Goldfield. *Min.Ref.* Gold (alluvial), *see* 3183.

—— ——, Helidon. *Min.Ref.* Mineral Water, *see* 6572.

The Springs Leads, 11 miles N.N.W. of Clermont. *Include* Victoria, Cement Hill (All Nations' Claim), Cumberland, McFayden's, Pewt's Hill, and Wet Ground Leads. *Min.Ref.* Coal, *see* 1675, 1676; Dolomite, 2589; Gold (alluvial), 3335-3354, (nugget) 3441A; Limestone, 739; Limonite, 5890, 5891; Marcasite, 6514.

GEOLOGICAL NOTE: *See remarks under* Black Ridge.

Theresa Bores. *See under* Artesian Bores. No. 312.

—— Cr., Peak Vale Stn., Clermont. *Min.Ref.* Gold (alluvial), *see* 3360.

Thermopylae Reef, Star R. Mineral Field. *Min.Ref.* Galena, *see* 2997; Gold, 4093; Hematite, 4755.

Thirteen-mile Cr., trib. of Pike's Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 1032. 1033; Gold, 3249; Sapphire, 2352; Stibnite, 7635; Topaz, 7795.

—— ——, trib. of Sugarloaf Cr., Stanthorpe. *Min.Ref.* Wolfram. *see* 8003.

Thirty-eight-mile Rail Peg, Cooktown Railway. *Min.Ref.* Coal, *see* 1602.

Thirty-seven and three-quarters-mile Rail. Peg, Cooktown Railway. *Min.Ref.* Coal, *see* 1608.

Thistle Mine (Good Luck Reef). Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3818.

Thomas (J. A.), Inspector of Mines. Notes on West Moreton Coal Mines. Q.G.M.J., vol. 11, p. 170 (1910).

Thomas' Colliery, Old Aberdare Seam, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1748, 1749.

—— ——, Tanyalba Cr., 12 miles S.W.byS. of Tiaro. *Min.Ref.* Coal, *see* 1821.

Thompson (William), Mineralogical Lecturer. Was appointed to the Department of Mines in March, 1889. First report was furnished in 1889, last one in 1891. In July, 1891, was transferred to the Geological Survey to map the surface features of the Charters Towers Goldfield, and left the service on 30th September, 1893. Reports:—

Description of Chillagoe Caves. A.R.D.M., 1891, pp. 135-8.

First Progress Report. [On the Topographical Map of Charters Towers]. A.R.D.M., 1893, p. 8.

Thompson's Creek, trib. of Dry R., 10 miles S. of Watsonville. *Min.Ref.* Cassiterite, *see* 1143-1148; Fluorspar, 2680.

—— New Mine, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1750.

—— Bore. *See under* Artesian Bores. No. 332.

Thom's Bore. *See under* Artesian Bores. No. 229.

Thomson Watershed Bore. *See under* Artesian Bores. No. 56.

Thomsonite. *Compo.*, Hyd.-silicate of alumina, lime, and soda. *Colour*, white. *Lustre*, pearly. A zeolite. *H.* = 5-5·5; *Sp.gr.* = 2·3-2·4.

7783. ——. Pelican Creek, Bowen R., about 50 miles S.W. of Bowen. *Co.* Salisbury; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 4, p. 6 (1887).

7784. ——. In cavities, in the amygdaloidal volcanic rock. *Loc.* Strathmore Cr., Bowen R. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 68 (1887).

Thorium-cerium-lanthanum phosphate. *See* Monazite.

Thorium (Th.). *Atom.Wt.* = 232·4; *Sp.gr.* = 11·0. *Colour*, grey-metallic.

USES: In its metallic form Thorium has no industrial application, but the oxide is an important constituent in the composition of several kinds of incandescent gas mantles. Monazite contains a few per cent. of Thorium and is the source from which the earth is commonly obtained, although occurring in greater proportions in other rarer minerals. *See* notes under Monazite.

Thornborough. *See maps,* Pls. 8, 9, 22. Hodgkinson Goldfield. *Lat.,* 16° 58′ S.; *Long.,* 144° 57′ E. *Min.Ref.* Galena, *see* 2763, 2764; Gold, 3749-3753A; Graphite, 4592; Limestone (coralline), 718; Stibnite, 7623, 7624.

Geological Note: *See under* Hodgkinson Goldfield.

Thornleigh Bore. *See under* Artesian Bores. No. 126.

Thorn's Sel., on Mt. Mona. *Min.Ref.* Coal, *see* 1774A.

Threadenham's Sel., Marblestone, 20 miles S. of Gladstone. *Min.Ref.* Copper carbonate, *see* 1955.

Three Bells Claim, Kilkivan Goldfield. *Min.Ref.* Calcite, *see* 555; Gold, 4408.

—— —— Mine, Running Cr., Marodian Goldfield. *Min.Ref.* Gold, *see* 4408.

—— Jokers, Elder Group, Cloncurry. *Min.Ref.* Copper, *see* 2017A.

—— Moon Cr., Cania Goldfield. *Min.Ref.* Limestone, *see* 691.

—— Sisters Bore. *See under* Artesian Bores. No. 179.

—— —— Extd. 1 S. Mines, Kirk Diggings, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4014.

—— Star Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1124.

Thulimbah, 30 miles (by rail) S. of Warwick. *Min.Ref.* Magnetite, *see* 6002.

Thulite. *Syn.* Zoicite, *which see.*

Thunda Co. Gregory South Dist. *See map,* Pl. 18.

—— Station, *viâ* Adavale. *Min.Ref.* Meteorite, *see* 6551A.

Thunder Cr., 15 miles N.byW. of Kilkivan. *Min.Ref.* Azurite, *see* 180. 261, 262; Copper Pyrites, 2321; Cuprite, 2481, 2482; Hematite. 4805; Iron Pyrites, 5445; Limonite, 5923; Malachite, 6376-6378; Redruthite, 7306; Tenorite, 7744.

Thunderbolt Bore. *See under* Artesian Bores. No. 229.

Thurulgoona Run Bores. *See under* Artesian Bores. No. 413.

Thursday Island—

Situation: *See maps,* Pls. 8, 9. Thirty miles N.W. of Cape York, 1,577 miles N.W.byW. of Brisbane. *Co.* Torres; *Dist.* Cook. *Lat.,* 10° 35′ S.; *Long.,* 142° 13′ E.

Port: The transhipping port of Burketown and Normanton, and of Horn and Possession Islands. An Imperial Naval Coaling Station is situated at Goode Island, 5 miles distant.

Harbourage: Available for vessels of large size, the jetty having 22 ft. at low water. Rise and fall of tides vary from 2 ft. to 10 ft. Sometimes only one tide in 24 hours.

Population: 1,534.

Rainfall: Yearly average between 1903-1907, 68·01 in. Yearly average of wet days between 1903-1907, 107.

Geological Note: The rocks are slates of undetermined age.

Geological Publications: *Nil.*

Warden: Stationed at Thursday Island. Inspector of Mines: Stationed at Croydon.

Tiaro. *See maps,* Pls. 4, 5. Thirty-nine miles (by rail) N. of Gympie. *Co.* March; *Dist.* Wide Bay. *Lat.,* 25° 44′ S.; *Long.,* 152° 37′ E.

Geological Note: Rocks of the district are divided into (1) Trias-Jura Coal Measures; (2) Gympie Formation (Permo-Carboniferous); and (3) Granite. The Coal Measures are much disturbed and rest on the Gympie Formation, both series being intruded by the granite.

Coal Measures: *See* Mt. Bopple, Gunalda, and Gundiah.

Tichborne Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Tierawoomba and Boothill Crs. (4 miles N.W. of junction of), 50 miles S.S.W. of Mackay. *Min.Ref.* Copper carbonate, *see* 1952; Gold (traces), 4189; Minium, 6641; Silver, 7505; Steatite, 7694; Tile Ore, 2569.

Tierney and McQueen's Wolfram Claim, 8 miles from Nymbool. *Min.Ref.* Copper Ore, *see* 2036; Scheelite, 7353.

Tilbooroo Run Bores. *See under* Artesian Bores. Nos. 414, 415.

Tilbury's Bore. *See under* Artesian Bores. No. 266

Tile Ore. *Var. of* Cuprite, *which see.*

Tilky Bore. *See under* Artesian Bores. No. 432.

Tilpal Station, 50 miles N.N.W. of Rockhampton. *Lat.*, 22° 47′ S.; *Long.*, 150° 13′ E. *Min.Ref.* Asbestos, *see* 114.

Timber Reserve, nr. Buccan Rail. Stn. (Beaudesert line). *Min.Ref.* Coal, *see* 1782.

—— —— (Old), 5 miles N.W. of Gympie. *Min.Ref.* Stibnite, *see* 7661.

—— ——, Pikedale Goldfield. *Min.Ref.* Psilomelane, *see* 7086.

Timberoo Group of Copper Mines. Cloncurry. *Includes* Mt. Minde M.F., Timberoo M.L., Resurgam M.L., Cecil M.L., Marguerite M.C., Ida M.C., and Brilliant M.C. *Min.Ref.* Bornite, *see* 414; Calcite, 459c-461; Copper Pyrites, 2098-2101; Cuprite, 2409; Göthite, 4563; Ferro-Calcite, 573A, 574; Hematite, 4687; Iron Pyrites. 4931; Limonite, 5792-5797; Malachite, 6154-6157; Muscovite, 6884; Redruthite, 7251, 7252; Tile Ore, 2527A, 2528; Tourmaline, 7816.

—— M.L. (716). Timberoo Group, Cloncurry. *Min.Ref.* Bornite, *see* 414; Calcite, 461; Copper Pyrites, 2101; Hematite, 4687; Iron Pyrites. 4931; Limonite, 5797; Malachite, 6157; Muscovite, 6884; Redruthite, 7252; Tile Ore, 2528.

Timburn Falls, Amby Cr., nr. Kilmorey Stn. *Min.Ref.* Calcite, *see* 580.

Tin (Sn.). *Atom.Wt.* = 119·0. *Sp.gr.* = 7·2. *Colour*, white-metallic. *Note.*—The metal is soft, malleable, and ductile, and is largely used in the plating of iron and in the manufacture of alloys. The principal alloys are those containing copper, such as bronze, gun metal, bell metal, and speculum metal, other important compounds being with lead to form pewter, Britannia metal, and plumbers' solder. The chief compounds are stannous and stannic chlorides, used in dyeing and calico printing, and stannic sulphide, which in the fine crystalline form known as mosaic gold, is used as a paint to produce an imitation of bronze. Stannic oxide makes a good polishing powder, and is used in the manufacture of enamel and plate glass.

Minerals: *See* Cassiterite and Stannite. The latter is very rare in the State.

Mineral and Geological Note: Commonly associated with Cassiterite, the oxide, are the following lode minerals:—Bismuthinite, Copper Pyrites, Galena, Iron Pyrites, Marcasite, Mispickel, Molybdenite, Monazite, Wolfram, Zinc Blende; the gangues are usually one or more of the following:—Calcite, Chlorite, Felspar, Fluorspar, Kaolin, Mica, Quartz, Talc. Other associated minerals include Garnet, Hornblende, Ilmenite, Siderite, Serpentine, Stannite, Steatite, Topaz, Tourmaline. In alluvial deposits there are to be found Beryl, Corundum, Diamond, Cairngorm, Garnet, Ruby, Spinel, Topaz, Zircon, Gold, etc., etc. Country rocks containing lode tin deposits include greisen, granite, aplite, porphyry, slate, shale, chlorite, quartzite, and diorite, the first four being common.

Geographical Note: There are four fields in Queensland where tin is the exclusive or principal mineral product, viz., Annan River, Bloomfield River, Kangaroo Hills, and Stanthorpe. It, however, occurs in large quantities throughout Northern Queensland, notably in the Herberton Gold and Mineral Field, where the deposits are very extensive. *See under* names of Fields and Mining Centres for descriptions and details. *See also maps*, Pls. 9, 13, 17.

Discoveries: First found in 1852 at Stanthorpe, but not worked until 1872. Kangaroo Hills was opened in 1875, Herberton in 1879, Coolgarra in 1881, Annan River 1885, and Smith's Cr. in 1901. For other localities *see under* heading Discoveries.

Statistical Note: The world's production of tin and tin ore for the year 1910 was 104,073 tons, Australia's contribution being 4,563 tons; of this quantity 2.953 tons came from Queensland, this being 2·83 per cent. of the world's production, and 64·72 per cent. of that of Australia.

The world's yield of tin from 1901 to 1910 (10 years) was 1,001,961 tons, the amount produced by Australia for the same period being 50,141 tons, Queensland's contribution to which amounted to 36,388 tons, this representing 3·63 per cent. of the world's output, and 72·57 per cent. of that of Australia. Of the total quantity of tin produced in Queensland, the Chillagoe and Herberton Gold and Mineral Fields (Walsh and Tinaroo) have supplied the largest amount, the total yield for those fields to end of 1912 being 66,782 tons, equal to 49·62 per cent. of the whole production

Tin—*continued :*

of the State. Stanthorpe has also been a large producer, its quota for the same period amounting to 49,431 tons, equivalent to 36·72 per cent. of the whole production.

The largest quantity of tin produced in one year in the State amounted to 8,938 tons, having a value of £606,184. the year being 1873. All of this year's output was from the Stanthorpe district, and represents 6·64 per cent. of the total quantity, and 7·39 per cent. of the total value of the State's production up to the end of 1912. In value the tin recovered from all sources in the State amounts, approximately, to £8,199,391, this being equal to 7·89 per cent. of the whole of Queensland's mineral production up to the end of 1912. *See stat. tables and diagram,* Pls. 38, 45, 46, 46A, 50.

VALUES : *See* Table under Metal Values in London for maximum and minimum prices for all years since 1892.

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Jack (Dr. R. L.)—G.S.Q. Pubs. Nos. 9 (1880), 12 (1882), 13 (1883), 37 (1887), 66 (1891), 69 (1890), 82 (1892). Supplementary Reports, Nos. 1, 4, 13.

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Rands (W. H.)—Supplementary Report No. 14.

Skertchly (S. B. J.)—G.S.Q. Pubs. Nos. 115 (1896), 119 (1897).

See under Geol. Surv. Pub. List, Supplementary Report List, and Govt. Ming. Jour. List for titles.

FIELDS AND MINING CENTRES. (*See* further references under name of field.)

Angor Tin Mines (nr. Georgetown). *See maps,* Pls. 8, 9. 32.

Annan R. Tinfield (nr. Cooktown). *See maps,* Pls. 8, 9.

Ballandean (nr. Stanthorpe). *See maps,* Pls. 12, 13, 30.

Bloomfield R. (nr. Cooktown). *See maps,* Pls. 8, 9.

Broadwater Cr. and its tributaries (nr. Stanthorpe). *See maps,* Pls. 12, 13, 30.

California Cr. (nr. Ord Rail. Stn., Mt. Garnet line). *See maps,* Pls. 8, 9, 22.

Cannibal Cr (nr. Maytown, Palmer R.). *See maps,* Pls. 8, 9.

Coolgarra (nr. Mt. Garnet Rail. Stn., br. of Chillagoe line). *See maps,* Pls. 16, 17, 22.

Dry R. (nr. Herberton). *See maps,* Pls. 16. 17, 22.

Emu Cr., Emuford (nr. Petford Rail. Stn., Chillagoe line). *See maps,* Pls. 8, 9, 22.

Etheridge. *See maps,* Pls. 8, 9, 32.

Eureka Cr. (nr. Stannary Hills Rail. Stn., br. of Chillagoe line). *See maps,* Pls. 8, 9, 22.

Fossilbrook (nr. Lyndbrook Rail. Stn., Etheridge line). *See maps,* Pls. 8, 9, 22.

Glen Linedale (nr. Mt. Garnet Rail. Stn.). *See maps,* Pls. 8, 9.

Granite Cr. (nr. Maytown, Palmer R.). *See maps,* Pls. 8, 9.

Herberton. *See maps,* Pls. 16, 17, 22

Irvinebank. *See maps,* Pls. 8. 9, 22.

Kangaroo Hills. *See maps,* Pls. 16, 17.

Koorboora (Rail. Stn., Chillagoe line). *See maps,* Pls. 8, 9, 22.

Lancewood (nr. Brookland Stn.). *See maps,* Pls. 8, 9, 32.

Mt. Fraser (nr. Mt. Molloy tramway, Cairns-Herberton Rail.). *See maps,* Pls. 8, 9, 22.

Tin—*continued:*

Fields and Mining Centres—*continued:*

Mt. Lewis (nr. Mt. Molloy tramway, Cairns-Herberton Rail.). *See maps,* Pls. 8, 9, 22.

Mt. Spurgeon (nr. Mt. Molloy tramway, Cairns-Herberton Rail.). *See maps,* Pls. 8, 9. 22.

Nettle's Cr. (nr. Coolgarra). *See maps,* Pls. 16, 17, 22.

Nymbool (Smith's Cr.) (Mt. Garnet Rail. br. Chillagoe line). *See maps,* Pls. 16, 17, 22.

Pascoe R. (Cape York Peninsula). *See maps,* Pls. 8, 9.

Pike's Cr. (nr. Stanthorpe). *See maps,* Pls. 12, 13, 30.

Quart Pot Cr. and its tributaries (Stanthorpe). *See maps,* Pls. 12, 13, 30.

Severn R. and its tributaries (Stanthorpe). *See maps,* Pls. 12, 13, 30.

Smith's Cr. (Nymbool) (Mt. Garnet Rail., br. Chillagoe line). *See maps,* Pls. 16, 17, 22.

Spring Cr. and its tributaries (Stanthorpe). *See maps,* Pls. 12, 13, 30.

Stanhills (nr. Croydon). *See maps,* Pls. 20, 21, 26.

Stannary Hills (Rail. Stn., br. of Chillagoe line). *See maps,* Pls. 8, 9, 22.

Stanthorpe. *See maps,* Pls. 12, 13, 30.

Sugarloaf Cr. and its tributaries (Stanthorpe). *See maps.* Pls. 12, 13, 30.

Tate R. (Fisherton) (nr. Almaden Rail. Stn., Chillagoe line). *See maps,* Pls. 8, 9, 22.

Truxillo, nr. Frewhurst Rail. Stn. (Etheridge line). *See maps,* Pls. 8, 9, 22.

Watsonville. *See maps,* Pls. 8, 9, 22.

Wild River (nr. Herberton). *See maps,* Pls. 16, 17, 22.

SMELTING WORKS: *See under* separate heading, Smelting Works in Queensland.

CRUSHING MILLS. For further details *see* A.R.D.M., 1912, p. 142.—

Tin Crushing Plants.	No. of Mills.	No. of Stamps.	Capacity: Tons per 24 hours.	Tin Crushing Plants.	No. of Mills.	No. of Stamps.	Capacity; Tons per 24 hours.
				Forward ...	15	177	430
Bakerville	1	9	20	Mount Agnes ...	1	10	30
Black Cap (Kangaroo Hills)	1	3	3	Nymbool	1	30†	70
Coolgarra	1	20	50	Red Hill (Kangaroo Hills)	1	10	24
Emu Creek	1	10	30	Reid's Creek ...	1	10	40
Ewan (Ka. Hills) ...	1	5	14	Rocky Bluffs ...	1	30	100
Fossilbrook	1	2	4	Sandy Creek (Ravenswood)	1	5	12
Go Ahead	1	5	10	Silver Valley ...	1	10	24
Gurrumbah	1	10	30	Stockyard Creek (Ravenswood)	3	30	60
Herberton	2	15	40	Sunnymount... ...	1	5	20
Hidden Valley (Kangaroo Hills)	1	3	3	Watsonville	2	20	37
Irvinebank	2	80*	200	Waverley (Kangaroo Hills)	2	13	24
Koorboora	2	15	26				
Forward ...	15	177	430	Totals ...	30	350	871

* Includes 20 stamps, as equivalent to Krom's Rolls.

† Includes 30 stamps, as equivalent to 4 Huntington Mills.

Tin Creek, br. of Archer R., 36 miles N.W.byN. of Coen. *Min.Ref.* Cassiterite, *see* 775.

—— Fields and Centres. *See* Fields *under* Tin.

—— Hut Bore. *See under* Artesian Bores. No. 229.

Tin Ore. *See* Cassiterite.

—— Oxide. *See* Cassiterite.

Tin Pyrites. *Syn.* Stannite, *which see.*

—— Sulphide. *See* Stannite.

—— Values in London. *See under* Metal Values.

Tinana Creek, 12 miles S. of Maryborough. *Min.Ref.* Coal, *see* 1830.

Tinaroo Creek, 6 miles N.N.E. of Tolga Rail. Stn. (Cairns line. *Lat.*, 17° 2′ S.; *Long.*, 145° 30′ E. *Min.Ref.* Cassiterite, *see* 956; Gold (alluvial), 3234; Molybdenite, 6841, 6842; Scheelite, 7350: Stibnite, 7632; Wolfram, 7975, 7976.

Geological Note: The country rocks comprise granite, quartz porphyry, aplite, and pegmatite. Defined quartz lodes and leaders occur in the granite, and contain Wolfram, Molybdenite, and Tin, while Scheelite is also found occasionally.

Tinckinchilla Creek, Russell Goldfield. *Min.Ref.* Gold (alluvial), *see* 3226.

Tinderry Bore. *See under* Artesian Bores. No. 51.

Tingalpa, E.byN. of Brisbane. *Lat.*, 25° 30′ S.; *Long.*, 153° 13′ E. *Min.Ref.* Clay, *see* 1578, 1579; Coal, 1773, 1774; Chalcedony, 1359A; Opal (common), 6992. *See also under* Coal Bores.

Geological Note: Rocks consist of sandstones, shales, and coal seams belonging to the Ipswich Formation (Trias Jura), with occasional intrusions of basalt.

Tingarra Co. Leichhardt Dist. *See map*, Pl. 10.

Tingleairy Extd. Mine, Trieste, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4041.

Tinnenburra Run Bores. *See under* Artesian Bores. No. 416.

Tinstone. *See* Cassiterite.

——. Burnett Dist. *See under* Govt. Ming. Jour., Report No. 34.

Tintinchilla (Arnica) Sub-artesian Bore. *See under* Artesian Bores. No. 338.

Tip Top Camp. *See* Agate Downs Goldfield.

Tipperary Bore. *See under* Artesian Bores. No. 432.

Titanate of Lime. *See* Sphene.

Titanic Iron. *Syn.* Ilmenite, *which see.*

Titaniferous Iron. *Syn.* Ilmenite.

Titanite. *Syn.* Sphene, *which see.*

Titanium (Ti). *Atom.Wt.* = 48·1. *Sp.gr.* = 3·5 amorphous, 4·87 crystalline. *Colour*, grey. Metallic.

Minerals: *See* Rutile, Ilmenite, and Sphene.

Uses: In its simple metallic condition no use has been found for Titanium, but the alloy, ferro-titanium, produces strength and hardness if added to steel in certain proportions. It has uses in dentistry, electrical work, and in pottery manufacture. Its presence in ores of other metals is not desirable, as it requires, like silica, a basic flux to form a slag.

Mineral Note: Occurrences of Rutile and Ilmenite are quite common, and, if a market could be found for titanium-bearing minerals, no doubt supplies would be forthcoming from the alluvial deposits in the tin-mining districts of Northern Queensland.

Titheroo Co. Warrego Dist. *See map*, Pl. 18.

Ti-tree Mine, Chillagoe. *Min.Ref.* Garnet Rock, *see* 3106; Magnetite, 5990.

Tivoli Bores (no record). *See* Ipswich Coalfield *under* Coal Bores.

Tivoli Colliery, North Ipswich Coal Area. *Min.Ref.* Coal, *see* 1751-1753; Retinite, 7312. *See also under* Govt. Ming. Jour., Special Report, No. 112. *See* geol. notes under Ipswich.

Toad's-Eye-Tin. *Var. of* Cassiterite, *which see.*

Tocal Bore. *See under* Artesian Bores. No. 439.

Todman's Tapautohaunga (Brigham Young) Mine, Norton Goldfield. *Min.Ref.* Galena, *see* 3045; Gold, 4267; Iron Pyrites, 5368; Malachite, 6357; Silver, 7519; Zinc Blende, 8188.

Toko Co. Gregory North Dist. *See map*, Pl. 20.

Tolmies, 129 miles W.byS. of Rockhampton (Central line). *See* Pl. 34. *Lat.*, 23° 33′ S.; *Long.*, 148° 43′ E. *Railway Base* for Tolmies Coal Mines. *Min. Ref.* Coal, *see* 1690. *See also under* Coal Bores.

Geological Note: The rocks in this locality and in the surrounding country belong to the Tolmies-Clermont Series of the Permo-Carboniferous System, and consist of sandstones, shales, volcanic tuffs, and small coal seams. The coal seams have been exploited in one locality, but have been found to contain rather too much ash to be of any great commercial value. The coal has a remarkable caking quality, although it will not form an adherent coke. *See* G.S.Q. Pub. No. 155 for details.

Tomahawk Creek (Anakie). Flows N.N.E. into Theresa Cr., 20 miles S. of Clermont. *Min.Ref.* Amethyst, *see* 7170; Cairngorm, 7181; Chalcedony, 1350A; Gold, 3361; Hornblende, 4838; Hyacinth, 8236; Ilmenite, 4902; Jasper, 5643; Magnesite, 5951; Magnetite, 6029; Rutile, 7335; Sapphire, 2355; Spinel, 7581; Topaz, 7806; Tourmaline, 7864; Zircon, 8236.

Tomkins' Opal Mine, 8 miles W. of Jundah Opal Field. *Min.Ref.* Precious Opal, *see* 6940C.

Tommy Dod Opal Mine, 13 miles W. of Jundah Opal Field. *Min.Ref.* Precious Opal, *see* 6940D.

"Tommalin." A miners' term for Tourmaline.

Tongy Run Bore. *See under* Artesian Bores. No. 417.

Tonko Run Bore. *See under* Artesian Bores. No. 253.

Tooker's Hill, nr. Tungamull (Central Rail. line). *Min.Ref.* Chromite, *see* 1487.

—— Mine, Mt. Wheeler. *Min.Ref.* Magnesite, *see* 5959.

Toolburra South Bore. *See under* Artesian Bores. No. 418.

Toolebuc Run Bores. *See under* Artesian Bores. No. 419.

Toolmaree Bore. *See under* Artesian Bores. No. 539.

Tooloombah Stn., 25 miles S. of St. Lawrence. *Min.Ref.* Gold, *see* 4349; Iron Pyrites, 5411.

Toomoo Co. Maranoa Dist. *See map*, Pl. 12.

Toorak Co. Burke Dist. *See map*, Pl. 20.

—— Run Bores. *See under* Artesian Bores. No. 420.

Toorbul Point, 28 miles N. of Brisbane. *Min.Ref.* Coal, *see* 1714A. *See also under* Coal Bores.

Toowoomba. *See maps*, Pls. 12, 13. 101 miles (by rail) W.byS. of Brisbane. *Lat.*, 27° 33′ S.; *Long.*, 151° 58′ E. *Min.Ref.* Magnesite, *see* 5953; Oil-bearing Shale, 6912; Olivine, 6929; Sphaerosiderite, 7421. *See also under* Govt. Mining Jour., Special Report No. 120.

Population: 19,777 (Census, 1911).

Geological Note: The rocks of Toowoomba consist of a number of varieties of basalt. Volcanic cones are to be seen in sections in the quarries near the town, and are of great interest to geological students. The basalt overlies shales, sandstones, and tuffs, of Walloon Formation, sections of which are exposed in the railway cuttings about Harlaxton and Spring Bluff, to the north. The basalts frequently contain olivine, some of which has a high commercial value for gem-making. Between Spring Bluff and Harlaxton a vesicular volcanic tuff is exposed in a railway cutting, from which very beautiful zeolite crystals have been obtained.

Coal Mines: *See under* King's Siding, Kingsthorpe, and Oakey.

Rainfall: Yearly average, 1902-1907, 36·78 inches; wet days, 89.

Chamber of Commerce: Sec., G. A. Leichney.

Technical College: For mining subjects taught *see under* "Technical Colleges."

—— Range. *Min.Ref.* Olivine, *see* 6925A, 6929A.

Top (20 miles) Bore. *See under* Artesian Bores. No. 141.

—— Camp, Prospector's Gully, Clermont. (*See* McMasters.)

—— ——, Ulam Goldfield. *Min.Ref.* Galena, *see* 3056; Gold, 4305.

—— —— (Mary Douglas Hill), Cloncurry. *Min.Ref.* Bismuth (native), *see* 324; Bismutite, 377; Gold (alluvial) 3177-3181, (nugget) 3435, 3436, 3473A; Hema-4689; Ironstone, 5491A.

—— Gin Sub-artesian Bore. *See under* Artesian Bores. No. 403.

Topaz. *Compo.*, Silicate of alumina and fluoride of silicon. *Colour*, bluish, colourless, rarely yellowish. *Lustre*, vitreous. *H.* = 8; *Sp.gr.* = 3·4-3·65.

MINERAL AND GEOLOGICAL NOTES: Topaz is frequently associated with tin and wolfram in lode deposits in Northern Queensland, and of itself forms lodes in granite and other kinds of country where tin, wolfram, and molydbenite deposits are to be found. It is also of common occurrence with tin, sapphires, and gold in nearly all the drift deposits of the eastern half of the State. Transparent colourless specimens in sizes large enough to be cut into gems are common, and sometimes pieces are picked up in the tin gravels of Stanthorpe or the Tate River several inches in diameter, and absolutely flawless. Pale green and blue stones are also common, and make very beautiful gems when properly cut, but yellow stones are seldom, if ever, met with. The rocks associated with Topaz include greisen, granite, aplite, schists, gneiss, and altered sedimentary rocks.

7784A.——. *Assoc.with* Cassiterite, Ilmenite, Rutile, Zircon, and Amethyst, in alluvial deposits. *Loc.* P.C. Workings, Rocky Cr., 5 miles above Brovinia Cr., br. of Cadarga Cr., 35½ miles S.S.W. of Gayndah, 60 miles (by road) *viâ* Cooranga Head Stn. *Co.* Newcastle; *Dist.* **Burnett.** *Ref.* Q.G.M.J., vol. 5, p. 62 (1904).

7785. ——. In alluvial cement. *Loc.* 3 miles E. of Eidsvold, Mt. Perry road, 38 miles N.W. of Gayndah. *Co.* Yarrol; *Dist.* Burnett. *Ref.* B.D.

7786. ——. *Assoc.with* Monazite, Wolfram, and Biotite, in quartz lode. *Loc.* Fingerton, 9 miles N. of Nymbool, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* B.D.

7787. ——. In short prisms. *Loc.* California Cr., nr. 'Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

7788. ——. *Assoc.with* Wolfram, Molybdenite, Cassiterite, Bismutite, Chalcolite; with traces of Hematite and Limonite, in small veins, in a large quartz lode in granite. *Loc.* Lappa Wolfram Lode, Lappa Junction (Chillagoe line), 104 miles S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7789. ——. *Assoc.with* Sapphire, Ruby, Garnet, Corundum, Zircon, and Tourmaline, in alluvial deposits. *Loc.* Jordan Cr. Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 157, p. 6 (1901).

7790. ——. *Assoc.with* Cassiterite and Beryl, in alluvial deposits. *Loc.* Lancewood Tin Mines, 10 miles N. of Brooklands Stn., 30 miles S. of Fossilbrook, 45 miles E.byN. of Georgetown. *Co.* Tate; *Dist.* Cook. *Ref.* B.D.

7791. ——. *Assoc.with* Cassiterite and Beryl. *Loc.* O'Brien's Cr., "Nine Mile," Lancewood Tin Mines (*ante*).

7792. ——. *Assoc.with* Cassiterite, Stannite, Zircon, Sapphire, Gold, Diamond, and Amethyst, in alluvial deposits. *Loc.* Broadwater and tributaries, Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 31 (1898).

7793. —— (as pebbles about one inch in diameter and less). *Assoc.with* Diamond, Sapphire, Spinel, Beryl, Zircon, Garnet, Tourmaline, Cairngorm, Cassiterite, Amethyst, Rock Crystal, and traces of Gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot. Sugarloaf, Lode, Arbouin's, Cannon, and Kettle Swamp Creeks, and Severn R., Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120 (1898).

7794. ——. *Assoc.with* Gold, Cassiterite, Cairngorm, Sapphire, Zircon, Spinel, Garnet, and Diamond, in alluvial deposits. *Loc.* Spring Creek and tributaries, Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pubs. 120, p. 32 (1898), and 125, p. 21 (1898).

7795. ——. *Assoc.with* Sapphire (blue). *Loc.* 13-Mile Cr., trib. of Pike's Cr., about 10 miles W.N.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

7796. ——. Gravel Ridge, Opalton Opal Field, 60 miles S.W. of Winton, 96 miles W.byN. of Longreach. *Co.* Fermoy; *Dist.* **Gregory North.** *Ref.* G.S.M.

7796A.——. In alluvial deposits. *Loc.* In creeks about Tenham Station, near junction of Kyabra and Cooper's Creeks. *Co.* Thunda; *Dist.* **Kennedy South.**

7797. ——. *Assoc.with* Cassiterite. *Loc.* Never-can-Tell Mine, Coolgarra, 12 miles (by road) N.E.byN. of Mt. Garnet Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 72, p. 4 (1891), and P.R.S.Q., vol. 4, p. 59 (1887).

7798. ——. *Assoc.with* Cassiterite, Wolfram, Iron Pyrites, Hematite, Limonite, Göthite, Mispickel, Azurite, Malachite, Websterite, Chlorite, Penninite, and Fluorspar, in quartz. *Loc.* Tin Mines, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

7799. ——. In colourless crystals about one inch in diameter. *Loc.* Dry River, 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* B.D.

7800. ——. *Assoc.with* Cassiterite, Ilmenite, Wolfram, and traces of gold, in alluvial deposits. *Loc.* Deep Lead, Herberton, 12 miles S.S.W. of Atherton Rail. Stn. (Cairns line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 115, pp. 1-15 (1896).

7801. ——. In quartz. Elephant Mine, Herberton (*ante*).

7802. ——. *Assoc.with* Cassiterite, in alluvial deposits. Herberton (*ante*). *Ref.* G.S.Q. Pub. 119, p. 54 (1897).

7803. ——. Nigger Cr., br. of Wild River, 3 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 15, p. 66 (1900).

7804. ——. *Assoc.with* Cassiterite and Magnetite, in alluvial deposits. *Loc.* Sandy and Prospector's Creeks, tribs. of Oakey Cr., Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 71, p. 9 (1891).

7805. ——. *Assoc.with* Cassiterite and Garnet, in alluvial deposits. *Loc.* Running Cr., Star R. Mineral Field. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, pp. 60, 68 (1887).

7806. ——. *Assoc.with* Gold, Sapphire, Spinel, Garnet, Zircon, Amethyst, Cairngorm, Chalcedony, Jasper, Rutile, Diamond, Magnetite, Ilmenite, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Creeks, Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref* G.S.Q. Pubs. 81 (1892), 125 (1897), 172 (1902).

7807. ——. Lagoon Cr., Caboolture, 31 miles (by rail) N. of Brisbane. *Co.* Canning; *Dist.* Moreton. *Ref.* L.B. 3, p. 270 (1893).

7808. ——. *Assoc.with* Gold (alluvial), Ruby, Almandine, Spinel, Sapphire (blue), Garnet (red), and Zircon, in alluvial deposits. *Loc.* Wallace's and Eldridge's Claim, Seven-mile Diggings, 7 miles S.E. of Nanango Goldfield, 123 miles N.W.byN. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* L.C.B.

7809. ——. *Assoc.with* Gold and Beryl, in alluvial deposits. *Loc.* Bed of Fly River, 304 miles W.byN. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 77, p. 8 (1891).

7810. ——. *Assoc.with* Gold, Magnetite, Ilmenite, Zircon, and Mica, in alluvial deposits. *Loc.* 17 miles up Vanapa River, 32 miles N. of Port Moresby (*ante*). *Ref.* G.S.Q. Pub. 56, p. 2 (1889).

Torbanlea Coal Mines, 11 miles (by rail) N.W. of Maryborough. *Lat.*, 25° 22′ S.; *Long.*, 157° 40′ E. *Railway Base* for Torbanlea Colliery. *See* Pl. 24. *Min. Ref.* Coal, *see* 1809.

GEOLOGICAL NOTE: *See under* Burrum. Coal was found here by James Robertson in 1880.

Torbanlea Accident, 1900 (Royal Commission on). *See under* Royal Commissions.

—— (Burrum) Bores. *See under* Coal Bores.

—— Government Bore. *See under* Coal Bores.

Torbeck's (Kirkwood's) Manganese Workings, Calliope R., 8 miles S.byW. of Gladstone. *Min.Ref.* Manganese-dioxide, *see* 6464.

Torbernite. *Syn.* Chalcolite, *which see.*

Tornado Mine, Irvinebank. *Min.Ref.* Cassiterite, *see* 873.

—— Silver Mine, Silverfield. *Min.Ref.* Copper Pyrites, *see* 2155; Galena, 2780; Iron Pyrites, 5060; Kaolin, 5676A; Mispickel, 6689; Silver, 7458; Zinc Blende, 8082.

Torpy's Silver Mine, Crooked Cr., 3½ miles E.N.E. of Almaden Rail. Stn. (Cairns line). *Min.Ref.* Galena, *see* 2792; Silver, 7459. *See also under* Govt. Mining Jour. Special Reports No. 59.

Torrens Creek, S.W.byS. of Charters Towers. *Min.Ref.* Gold, *see* 3366A; Ilmenite, 4903A.

Torrent Creek, about 28 miles S. of Townsville. *Min.Ref.* Limestone; *see* 652.

Torres Co. Cook Dist. *See map*, Pl. 8.

Torres Strait (Islands of). *Min.Ref.* Galena, *see* 2813; Gold, 3802-3824A; Iron Pyrites, 5087-5101.

Torway Creek, N. of Caloundra Head. *Min.Ref.* Coal, *see* 1714.

Totness Bore. *See under* Artesian Bores. No. 437.

Touchstone. *Syn.* Black Jasper, Lydian Stone. *See* Jasper.

Tourmaline. *Compo.*, Silicate of alumina, boron, etc., etc. *Colour*, usually black. *Streak*, colourless. *Lustre*, vitreous. *H.* = 7-7·5; *Sp.gr.* = 2·98-3·20. *Var.* Rubellite, Schorl.

USES: Dark Tourmaline has a very limited although very useful application in optical mineralogy, and clear green and pink stones are in great demand for gem-making. Coloured Tourmalines have been found in Queensland, but they are opaque, and quite useless as gem-stones.

7811. ——. Head of Fullarton R., 42 miles S.E.byS. of Cloncurry. *Co.* Allison; *Dist.* **Burke.**

7812. ——. *Assoc.with* Gold, Siderite, and Copper Pyrites, in quartz and calcite. *Loc.* Pumpkin Gully, S. of Fisher's Cr., 12 miles E. of Cloncurry. *Co.* Beaconsfield; *Dist.* Burke. *Ref.* G.S.Q. Pub. 104, p. 4 (1895).

7813. ——. Uncle Tom Gold Mine, between Pumpkin Gully and Fisher Cr. (*ante*). *Ref.* G.S.M.

7814. ——. *Assoc.with* Malachite, Atacamite, Chrysocolla, and Dioptase?, in schist. *Loc.* Weka M.C. (?), Eva Group, Duck Cr., 22½ miles S.S.W. of Cloncurry. *Co.* Selwyn; *Dist.* Burke. *Ref.* G.S.Q. Pub. 215, pp. 159, 160 (1908).

7814A. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Calcite, in quartz. *Loc.* Mt. Shamrock M.C. (184), Mt. Wheeler Group, Soldier's Cap, 29½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, p. 224 (1908).

7815. ——. *Assoc.with* Copper Pyrites, Redruthite, Azurite, Malachite, Chrysocolla, Iron Pyrites, and Limonite, in schist, slate, and quartz. *Loc.* Tambourine R.C. (286), Tambourine Group, Duck Cr., 26 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 166, 167 (1908).

7816. ——. *Assoc.with* Malachite, Calcite, Ferro-calcite, and Tourmaline, in cellular gossan and chloritic schist. *Loc.* Marguerite M.C. (151), Timberoo Group, Slaty Cr., 18 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 177, 178 (1908).

7817. ——. Boondooma Stn., Burnett R., 40 miles W. of Wondai Rail. Stn. (Kilkivan Br. line), 141 miles S.W.byW. of Maryborough. *Co.* Boondooma; *Dist.* **Burnett.** *Ref.* B.D.

7818. ——. In aplite. *Loc.* ¼-mile S.E. of Gaeta House, Gaeta Goldfield, Tenningering, 30 miles N. of Mt. Perry Rail. Stn. *Co.* Bowen (Yarrol); *Dist.* Burnett. *Ref.* L.C.B.

7819. ——. Freehold Estate, Mt. Perry, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen (*ante*). *Ref.* G.S.M.

7820. ——. Mt. Victoria, near Mt. Perry (*ante*). *Ref.* G.S.M.

7821. ——. *Assoc.with* Garnet and Muscovite, in quartz. *Loc.* Nr. Wolca, 6 miles N. of Mt. Perry Rail. line. *Co.* Bowen; *Dist.* Burnett. *Ref.* B.D.

7822. ——. *Assoc.with* Chlorite and Olivine, in altered rock. *Loc.* Biggenden Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn. (Ganydah Br. line). *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60, p. 1 (1890).

7823. ——. Nanango Goldfield, 135 miles (by rail) S.S.W. of Maryborough. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* G.S.M.

7824. ——. In basaltic country. *Loc.* Taabinga Village, Kingaroy Rail. Stn. (Kilkivan br. line), 120 miles (by rail) S.W. of Maryborough. *Co.* Fitzroy (*ante*). *Ref.* O.R.

7825. ——. In quartz and felspar. St. John's Cr. Goldfield, Burnett R., 16 miles S.W. of Eidsvold *Co.* Wicklow; *Dist.* Burnett. *Ref.* G.S.M.

7826. —— (as crystals). *Assoc.with* Cassiterite. *Loc.* Stockman Reef, Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 43, p. 3 (1887).

7827. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Southern Cross Lode, ¼-mile below Clunn's Falls, **Annan R. Tinfield**, 20 miles S. of Cooktown. *Co* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 91, p. 5 (1893).

7828. ——. *Assoc.with* Cassiterite, in quartz lode. *Loc.* Creighton's Tin Mine, Mt. Amos, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 9 (1891).

7829. ——. *Assoc.with* Cassiterite, in quartz lode. *Loc.* Fiery Star Tin Mine, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub. 66, p. 8 (1891).

7830. ——. *Assoc.with* Cassiterite, Mispickel, and Wolfram, in talcose quartz. *Loc.* Gladstone Tin Mine, Mt. Amos (*ante*). *Ref.* G.S.Q. Pub. 66, p. 9 (1891).

7831. ——. *Assoc.with* Cassiterite and Iron Pyrites, in quartz. *Loc.* Keating, Madden, and Co.'s Tin Mine, Mt. Amos, Annan R. Tinfield (*ante*). *Assay:* Metallic Tin = 48½ per cent. *Ref.* G.S.Q. Pubs. 35, p. 15 (1889), and 66, p. 9 (1891).

7832. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Lake's Original Opening, below Fiery Star Lease, Mt. Amos, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 8 (1891).

7833. ——. *Assoc.with* Cassiterite, Mispickel, Wolfram, and Talc, in quartz. *Loc.* Mt. Amos Tin Mine, Annan R. Tinfield (*ante*). *Assays:* Metallic Tin = 32½ and 16½ per cent. *Ref.* G.S.Q. Pub. 35, p. 15 (1889).

7834. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Murray and McArdle's Tin Mines, Mt. Amos, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 9 (1891).

7835. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Owen and Davidson's Tin Mines, Mt. Amos, Annan R. Tinfield (*ante*). *Assays:* (1) Metallic Tin = 61 per cent. (2). Metallic Tin = 32 per cent. *Ref.* G.S.Q. Pub. 35, p. 15 (1889).

7836. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Sullivan and Party's Tin Workings, Mt. Amos, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 15 (1889).

7837. ——. *Assoc.with* Cassiterite, in quartz, talc, and kaolin. *Loc.* Mt. Browning Tin Mine, nr. Mt. Amos, Annan R. Tinfield (*ante*). *Assays:* Metallic Tin = 10·9, 4·1, 15·2, 19·8, 18·46, 36·3 per cent. *Ref.* G.S.Q. Pub. 66, p. 8 (1891).

7838. ——. *Assoc.with* Cassiterite, Wolfram, Mispickel, Felspar, and Quartz. *Loc.* Wright's Lease (99), Black Prince Lode, Mt. Hartley, 4 miles S. of Rossville, 26 miles S.S.E. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 7 (1891).

7839. ——. *Assoc.with* Cassiterite and Mispickel, in quartz lode. *Loc.* Cahill Bros.' Lease (89), Jones's Cr., Mt. Leswell, 25 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub 66, p. 5 (1891).

7840. ——. *Assoc.with* Cassiterite, Iron Pyrites, and Mispickel, in talc and in quartz lode. *Loc.* Collingwood Tin Lease (176), E. side of Mt. Leswell, 1½ mile S.S.W. of Rossville, 26 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Assay:* Metallic Tin = 1·26 per cent. *Ref.* G.S.Q. Pub. 66, p. 4 (1891).

7841. ——. *Assoc.with* Cassiterite, Mispickel, and Chlorite, in quartz. *Loc.* Dodd's Tin Mine, nr. head of Byer's Gully, trib. of Jones's Cr., Mt. Leswell, 26 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

7842. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Mt. Leswell Tin Leases (22, 28, 51, and 52), 1½ mile S.S.W. of Rossville, 26 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pubs. 66, p. 2 (1891), and 210, p. 15 (1907).

7842A.——. *Assoc.with* Cassiterite and Iron Pyrites, in quartzite. *Loc.* Lease (96), Mulligan's Gully, E. side of Mt. Leswell, 1½ mile S.S.W. of Rossville, 26 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 5 (1891).

7843. ——. *Assoc.with* Cassiterite, in lode. *Loc.* Mt. Harbord Tin Mine, S.E. of Mt. Leswell, 1½ mile W.S.W. of Rossville, 26 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 4 (1891).

7844. ——. *Assoc.with* Cassiterite, in felspar. *Loc.* Richmond Claim, Jones's Creek, E. side of Mt. Leswell, 1½ mile W.S.W. of Rossville (*ante*). *Ref.* G.S.Q. Pub. 66, p. 5 (1891)

7845. ——. *Assoc.with* Cassiterite, in lode. *Loc.* Wheal Davey Mine, Lease (58), S.E. of Mt. Leswell, 1½ mile W.S.W. of Rossville (*ante*). *Assay:* Metallic Tin = 6·8 per cent. *Ref.* G.S.Q. Pub. 66, p. 3 (1891).

7846. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Mt. Romeo alluvial Tin Mines, 5 miles S.S.W. of Rossville, 28 miles S. of Cooktown, Annan Tinfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 16 (1887), and 210, pp. 21, 22 (1907).

7847. ——. *Assoc.with* Cassiterite, in porphyry. *Loc.* Lion's Den Tin Mines, on Mungamby Cr., 22 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Assays:* Metallic Tin = 5·4 and 11·4 per cent. *Ref.* G.S.Q. Pub. 66, p. 6 (1891).

7848. ——. *Assoc.with* Cassiterite, Felspar, Mica, and Mispickel. *Loc.* Harris and Party's Tin Mine, Rossville, 25 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 16 (1889).

7849. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Native Youth Tin Mine, Wallaby Cr., Rossville, 28 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Yield:* Tin = 70·8 per cent. *Ref.* G.S.Q. Pub. 91, p. 5 (1893).

7850. Tourmaline. *Assoc.with* Wolfram, in quartz reef. *Loc.* Rossville Tin Mines, 25 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 16 (1889).

7851 ——. *Assoc.with* Cassiterite and Garnet. *Loc.* Bakerville Mine, 4 miles W. of Watsonville, **Walsh and Tinaroo Mineral Fields.** *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 125, p. 42 (1897).

7852. —— *Assoc.with* Cassiterite. *Loc.* Day Dawn Tin Mine. Irvinebank, 10 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887), and G.S.M.

7853. —— (as crystals). *Assoc.with* Cassiterite and Garnet, in porphyry. *Loc.* Baal-Gammon Tin Mine, Watsonville, 7 miles E.S.E. of Stannary Hills Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 119, p. 12 (1897).

7854. ——. Calcifer, 132 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q., vol. 15, p. 63 (1900).

7855. ——. As needles, in quartz vein. *Loc.* Lappa Lappa, 102 miles S.W. of Cairns (Cairns-Chillagoe, Mt. Garnet line), Walsh and Tinaroo Mineral Fields (*ante*).

7856. ——. *Assoc.with* Garnet, Corundum, Sapphire, Ruby, Zircon, and Topaz, in alluvial deposits. *Loc.* Jordan Cr. Goldfield, 22 miles W.S.W. of Geraldton, *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 157, p. 6 (1901).

7857. ——. Lizard Island, nr. Cooktown. *Dist.* Cook. *Ref.* G.S.M.

7858. ——. *Assoc.with* Diamond, Sapphire, Spinel, Beryl, Zircon, Garnet, Topaz, Amethyst, Cairngorm, Cassiterite, Rock Crystal, and traces of Gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot, Sugarloaf, Lode, Arbouin's, Cannon, and Kettle Swamp Creeks, and Severn River, Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120 (1898).

7859. ——. *Assoc.with* Cairngorm, Rock Crystal, Zircon, Sapphire and Cassiterite, in alluvial deposits. *Loc.* Camp Reserve, Spring Cr., 6 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

7860. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Day Dawn Tin Mine, Herberton, 12 miles S.S.W. of Atherton Rail. line (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, pp. 59, 67 (1889).

7861. —— (fibrous). *Assoc.with* Gold, in quartz vein. *Loc.* Morris River, nr. Euri Cr., 18 miles W.S.W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* B.D.

7862. ——. In quartz. Star R., br. of Burdekin R., 50 miles W. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Ref.* G.S.M.

7863. ——. *Assoc.with* Iron Pyrites, in porphyry. *Loc.* Normanby Range, 46 miles S. of Bowen. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 5, p. 1 (1879).

7864. ——. *Assoc.with* Gold, Sapphire, Spinel, Garnet, Zircon, Amethyst, Cairngorm, Chalcedony, Jasper, Rutile, Topaz, Diamond, Magnetite, Ilmenite, Magnesite, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Creeks, Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), 172, p. 20 (1902).

7865. ——. Peak Vale Stn., 18 miles S.S.W. of Clermont. *Co.* Clermont; *Dist.* Leichhardt. *Ref.* B.D.

7866. ——. *Assoc.with* Gold, Garnet, Zircon, and Magnetite, in alluvial deposits below basalt. *Loc.* Basalt Hill Diggings, 3 miles N. of Borilla Rail. Stn., 7 miles W. of Anakie. *Co.* Plantagenet; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 172, p. 7 (1902).

7866A. ——. In quartz. Crow's Nest, 34 miles (by rail) N. of Toowoomba. *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* G.S.M.

7867. ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel, in quartz reefs. *Loc.* Seven-mile Diggings, 7 miles S.E. of Nanango Goldfield, 123 miles N.W.byN. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* L.C.B.

7868. ——. In pegmatite dykes. Seven-mile Diggings, 7 miles S.E. of Nanango Goldfield (*ante*). *Ref.* L.C.B.

7869. ——. Macpherson Range, 64 miles S. of Brisbane, nr. N.S.W. border. *Co.* Ward; *Dist.* Moreton. *Ref.* Q.M.

7870. ——. *Assoc.with* Gold, Iron Pyrites, and Calcite, in quartz reef. *Loc.* Union Gold Mine, Cawarral Goldfield, 15 miles N.N.E. of Rockhampton. *Co.* Livingstone; *Dist.* **Port Curtis.** *Ref.* P.R.S.Q., vol. 4, p. 67 (1887).

7871. ——. In quartz reef. *Loc.* About 3 miles S. of Westwood, 34 miles (by rail and road) S.W. of Rockhampton. *Co.* Pakington; *Dist.* Port Curtis. *Ref.* B.D.

7872. ——. *Assoc.with* Gold, Iron Pyrites, and Calcite. *Loc.* Union Gold Mine, Mt. Morgan (Crocodile) Goldfield, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* P.R.S.Q., vol. 4, p. 51 (1882).

7873. ——. *Assoc.with* Copper Pyrites. *Loc.* United Gold Reefs, Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox; *Dist.* **Wide Bay.**

7874. ——. Woolooga Estate, Par. of Brooyar, 36 miles (by rail) N.W.byW. of Gympie (on Kilkivan Br. line). *Co.* Lennox (*ante*). *Ref.* G.S.M.

7875. ——. **Rubellite** (*var.*). *Colour*, red. In pipe veins in decomposed granite. *Loc.* Anakie, 193 miles (by rail) W. of Rockhampton. *Co.* Plantagenet; *Dist.* Leichhardt.

7876. ——. **Schorl** (*var.*). *Assoc.with* Gold and Iron Pyrites, in calcite. *Loc.* Union G.M. Co.'s Lease, Mt. Morgan (Crocodile) Goldfield, 24 miles S.S.W. of Rockhampton (Mt. Morgan Br. Rail.). *Co.* Raglan; *Dist.* Port Curtis *Ref.* P.R.S.Q., vol. 4, pp. 40, 67 (1887).

7877. —— ——. *Assoc.with* Gold, Silver, Copper Pyrites, Iron Pyrites, Mispickel Galena, and Zinc Blende, in quartz. *Loc.* Victoria Reef, Black Snake Goldfield, 10 miles S. of Kilkivan. *Co.* Lennox; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

Tourmaline United Mine, Bakerville. *Min.Ref.* Cassiterite, *see* 842; Ironstone, 5522; Manganese-dioxide, 6407.

Towalla Goldfield. *See* Russell Extd. Goldfield.

—— King Mine, Russell Extd. Goldfield. *Min.Ref.* Galena, *see* 2810; Gold, 3790; Iron Pyrites, 5084.

Tower Hill Sub-artesian Bore. *See under* Artesian Bores. No. 421.

—— of London, 3 miles S. of Chillagoe. *Min.Ref.* Limestone, *see* 638.

Toweran Run, Burnett R., S.W. of Rosedale. *Min.Ref.* Scheelite, *see* 7356.

Towerhill Co. Mitchell Dist. *See map*, Pl. 18.

Town Common, Warwick. *Min.Ref.* Manganese-dioxide, *see* 6427; Rhodonite, 7319; Rhodochrosite, 7314.

Townley Coal Co.'s Bores (Stewart's Creek). *See under* Coal Bores.

Townshend's Bore. *See under* Artesian Bores. No. 392.

Townsville—

SITUATION: *See maps*, Pls. 16, 17. 858 miles N.W. of Brisbane. *Co.* Elphinstone; *Dist.* Kennedy North. *Lat.*, 19° 17′ S.; *Long.*, 146° 52′ E. The principal city of Northern Queensland. *Port* for the Goldfields of Charters Towers, Ravenswood, Strathalbyn, Piccadilly, Cape R., Cloncurry, Agate Downs, and Bower Bird; the Fanning and Far Fanning Gold Diggings; the Argentine (Star R.) Silver Field; the Cloncurry Mineral Field; and the Kynuna and Opalton Opal Fields.

HARBOURAGE: The construction of breakwaters, and the dredging of channels has made this a harbourage for the largest ships. Spring tides vary from 8 ft. to 12 ft.; neaps, 4 ft. to 8 ft. Depth of water at Eastern Pier varies from 20 ft. to 24 ft. at L.W.S.; at Ross Creek depth varies from 3 ft. to 12 ft. at L.W.S.

POPULATION: 19,777 (Census 1911).

RAINFALL: *See under* separate heading.

MINERAL REFERENCES: Asbestos, *see* No. 107; Coal, 1642A; Gold, 4007.

GEOLOGICAL NOTE: The rocks in and about Townsville consist of felspar porphyry, quartz porphyry, and diorite, the latter breaking through the porphyries in large massive dykes.

GEOLOGICAL PUBLICATIONS: There are no reports dealing specially with Townsville. *See under* Charters Towers, Cape River, Agate Downs, Bower Bird, Ravenswood, Cloncurry, and Star River for reports on district. *See also under* Govt. Ming. Jour. Special Reports, No. 66; *also under* Supplementary Report List, Nos. 3, 36.

WARDEN: Stationed at Townsville. INSPECTOR OF MINES: Stationed at Charters Towers.

CHAMBER OF COMMERCE: Sec., H. B. Marks.

TECHNICAL COLLEGE: For mining subjects taught *see under* "Technical Colleges."

GENERAL INFORMATION: Consult *Pugh's Almanac, Queensland Post Office Directory; Post and Telegraph Guide.* Newspapers: *Townsville Bulletin, North Queensland Herald, Evening Star, Federal.* Journal: *Queensland Government Mining Journal* (Brisbane).

Townsville Bore. *See under* Artesian Bores. No. 412.

—— Coal Measures. *See* Stewart's Cr.

—— Road (E. side of), near Dalrymple, N. of Charters Towers. *Min.Ref.* Chrysocolla, *see* 1534; Native Copper, 2003; Malachite, 6315.

Tozer (Sir Horace), ex-Agent-General for Queensland. Queensland (Anakie) Gem Industry. Q.G.M.J., vol. 4, pp. 63-66 (1903).

Trafalgar Reef, Hamilton Goldfield. *Min.Ref.* Copper carbonate, *see* 1883A; Gold, 3707; Limonite, 5839.

Travertine. *Var. of* Calcite, *which see.*

Traveston Gold Deposits. *See* G.S.Q.P. 94, p. 6 (1892).

Tremolite. *Var. of* Hornblende, *which see.*

Trevethan Cr., Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 825, 826.

Triad Lease, Yorkey's Goldfield. *Min.Ref.* Galena, *see* 3079; Gold, 4412; Iron Pyrites, 5455; Stibnite, 7655.

Trieste Mining Centre, Ravenswood Goldfield. *Includes* Elizabeth, Genoa, Hanoverian, Ironclad, Molly Bawn, Premier, Star of the South, Tingalany, and Trieste Reefs. *Min.Ref.* Cerussite, *see* 1229; Galena, 2944, 2945; Gold, 4040, 4041; Iron Pyrites, 5255, 5256.

—— Reef, Ravenswood Goldfield. *Min.Ref.* Galena, *see* 2945; Gold, 4042; Iron Pyrites, 5256.

—— Reef, Jessop's Hill, Palmer Goldfield. *Min.Ref.* Gold, *see* 3672.

Trikelana Group, Burke R., Cloncurry. *Includes* Trikelana M.L. (522), Inheritance M.L. (657), and Legacy M.L. (653). *Min.Ref.* Azurite, *see* 207; Chrysocolla, 1524; Copper Pyrites, 2208; Limonite, 5869; Ironstone, 5545; Malachite, 6270-6271; Redruthite, 7295.

—— M.L. (522), Cloncurry. *Min.Ref.* Azurite, *see* 207; Chrysocolla, 1524; Copper Pyrites, 2208; Ironstone, 5545; Limonite, 5869; Malachite, 6270, 6271; Redruthite, 7295.

Tripolite. *Var. of* Hydrous Silica, *see under* Opal. Mineral references, Nos. 7024-7033B.

USES: Tripolite, because of its abrading power, is commonly used as a polishing powder by lapidaries, and forms part of several powders used for polishing metals. It was frequently mixed with common toilet soap, principally to give it body, but its use for this purpose is now prohibited, and is considered an adulterant. It is a good non-conductor of heat, and is, therefore, well adapted to cold storage—with or without refrigeration—and for boiler coverings and firebricks, the two latter also because of its infusibility. Being soluble in alkalies, it can be made into water glass, also being utilised in the manufacture of paints, and as a light material with which to load up rubber goods. In the manufacture of explosives, on account of its power of absorption of liquids, it is used as a base or carrier for nitro-glycerine, but for this purpose it must be free of impurities. Generally considered, the value of Tripolite depends on its power of absorption, low specific gravity, infusibility, freedom from colour and impurities, and in being a non-conductor of heat. The impurities which would affect its value are clay, iron stains, and organic matter, whilst an incipient change from a porous to an opaline condition would also reduce its power of absorption, and render it valueless. Tripolite of good quality should absorb its own weight of water, and this may be taken as a safe gauge of its power of absorption.

GEOLOGICAL NOTE: A large flat-bedded deposit occurs between flows of basalt on the MacPherson Range, close to the south-eastern border of the State. In this locality there are innumerable outcrops of the mineral on the sides of the spur ranges, and the deposits cover an area of many square miles at an elevation of about 1,000 feet above sea level. The quality of the tripolite is irregular, sometimes being heavy, very impure, and dark with organic matter, but usually very light and porous, and ranging in colour from white to whitish grey. At places the deposit, which is frequently ten feet thick, has been altered into common opal, the change to opal taking place from the outside to the interior, often leaving a kernel of unaltered Tripolite in the centre of a mass. A section on one of the roads on the range is made through this opal, and is known as the Glass Cutting.

Triumph Mine, Horn Is. Goldfield. *Min.Ref.* Galena, *see* 2824; Gold, 3819; Iron Pyrites, 5101; Zinc Blende, 8094.

Trivalor Bore. *See under* Artesian Bores. No. 392.

Trollope's Hill (S.W. of), Stanthorpe. *Min.Ref.* Cassiterite, *see* 980; Wolfram, 8002.

True Blue Centre, Croydon Goldfield. *See* Pl. 26. *Includes* True Blue and Lady Isabelle Reefs. *Min.Ref.* Native Copper, *see* 1983; Galena, 2705; Gold, 3549-3552; Iron Pyrites, 4966; Lignite, 1597.

—— —— Claim, Black Ridge, Clermont Goldfield. *Min.Ref.* Coal Band, *see* 1664; Gold (alluvial), 3306.

—— —— Claim, Herberton. *Min.Ref.* Cassiterite, *see* 1125; Wolfram, 8026.

—— —— Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 55; Cerussite, 1282; Galena, 2998; Minium, 6628.

—— —— ——, Mt. Perry. *Min.Ref.* Azurite, *see* 176.

—— —— G.M.L. (44), Eastern Boyne Goldfield. *Min.Ref.* Gold, *see* 4256.

—— —— Lease (161), Kangaroo Hills Mineral Field. *Min.Ref.* Aurichalcite, *see* 149; Azurite, 218; Bornite, 427; Copper carbonate, 1938; Copper Pyrites, 2248; Cuprite, 2464; Galena, 2974; Malachite, 6308; Native Silver, 7557.

—— —— M.L. (29), Mt. Flora G. and M. Field. *Min.Ref.* Hematite, *see* 4769H; Malachite, 6339B; Mispickel, 6771B.

—— —— Reef, Croydon Goldfield. *Min.Ref.* Galena, *see* 2705; Gold, 3551; Iron Pyrites, 4966; Ironstone, 5504; Native Silver, 7547.

—— —— ——, Western Cr., Etheridge Goldfield. *Min.Ref.* Gold, *see* 3743.

—— —— ——, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3709.

—— —— ——, Normanby Goldfield. *Min.Ref.* Azurite, *see* 228; Copper Pyrites, 2262; Gold, 4135.

—— —— ——, Ulam Goldfield. *Min.Ref.* Gold, *see* 4308; Iron Pyrites, 5398; Ironstone, 5620.

Trump Extd. M.C. (368), McPhail Group, Cloncurry. *Min.Ref.* Chrysocolla, *see* 1505; Dioptase, 2582; Iron Pyrites, 4926; Limonite, 5779; Malachite, 6138; Redruthite, 7240.

Truxillo, 15 miles S.byW. of Fossilbrook. *Min.Ref.* Cassiterite, *see* 970A; Graphite, 4594; Hercynite, 4815. Country rock is said to be granite.

Try Again United Mine, Lucky Downs Diggings. *Min.Ref.* Gold, *see* 3879A.

—— —— Reef, Thane's Cr. Goldfield. *Min.Ref.* Galena, *see* 2843; Gold, 3870; Iron Pyrites, 5130.

—— —— and Chance Tin Mine, Watsonville. *Min.Ref.* Cassiterite, *see* 919; Chalcanthite, 1325; Copper carbonate, 1891; Copper Pyrites, 2164; Iron Pyrites, 5068; Limonite, 5841A; Marcassite, 6504; Mispickel, 6695; Ochre (red), 4813, (yellow) 5934; Wolfram, 7954.

Try-it Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

Try-No-More Silver Mine, Dry R., br. of Wild R., S.S.W. of Herberton. *Min. Ref.* Copper Pyrites, *see* 2210; Galena, 2860; Marcassite, 6506; Zinc Blende, 8110.

Tuaburra Bore. *See under* Artesian Bores. No. 358.

Tuckerang Sub-artesian Bore. *See under* Artesian Bores. No. 317.

Tucker's Gully, 12 miles S. of Gladstone. *Min.Ref.* Gold (alluvial), *see* 3379; Limestone, 667.

—— Silver-Lead Lode, Coolgarra. *Min.Ref.* Anglesite, *see* 41; Galena, 2846; Minium, 6595.

Tuen Bore. *See under* Artesian Bores. No. 416.

Tufa. *Var. of* Calcite, *which see.*

Tulby Run Bore. *See under* Artesian Bores. No. 422.

Tulga Selection Bores. *See under* Artesian Bores. No. 423.

Tulip (1 E.) M.C. (180), Daisy Group, Cloncurry. *Min.Ref.* Actinolite, *see* 4853; Limonite, 5759; Malachite, 6111.

Tull's Block Bore. *See under* Artesian Bores. No. 424.

Tullundunna Bore. *See under* Artesian Bores. No. 425.

Tully River, 42 miles S. of Herberton. *Min.Ref.* Corundum, *see* 2372; Gold (alluvial), 3256.

Tumulca Cr. Bore. *See under* Artesian Bores. No. 306.

Tungamull, 18 miles (by rail) E.N.E. of Rockhampton, Emu Park Br. Rail. *Min.Ref.* Asbestos, *see* 113; Chromite, 1488, 1488A; Limestone, 686. *Geological Note.*—The country is altered sedimentary rocks of Gympie Formation. Serpentine occurs in association with this Formation, and contains small deposits of Chromite.

Tungstates. Iron and manganese, *see* Wolfram; lime, *see* Scheelite.

Tungsten (W). *Atom. Wt.* = 184·0. *Sp.gr.* = 19·13. *Colour,* white-metallic. Brittle. Heavy.

Minerals: *See* Scheelite, Tungstite, and Wolfram.

Uses: The metal is an important one, and in combination with iron, as ferro-tungsten, forms an alloy of great utility in the manufacture of hard, tough steel, the metal also being used to some extent in the manufacture of electric light filaments. Wolfram, Hubnerite, and Scheelite are the minerals commonly used for the extraction of the metal. First-class ore should contain not less than 60 per cent. tungstic acid, not more than 0·01 per cent. of sulphur and 0·25 per cent. of phosphorous.

Tungsten Oxide. *See* Tungstite.

Tungstite. *Syn.* Tungstic Ochre. *Compo.,* Oxide of tungsten. *Colour,* bright yellow. Earthy. *Sp.gr.* Varies with degrees of impurity. *Contents* (*max.*), Tungsten 79 per cent.

7878. ——. *Assoc.with* Wolfram, Molybdenite, Scheelite, and Cassiterite, with traces of Tenorite, Malachite, Chrysocolla, Iron Pyrites, etc., in defined quartz lodes in slates. *Loc.* Mt. Carbine, 11 miles W. of Port Douglas, 34 miles (*viâ* Mt. Molloy) N.N.W. of Mareeba (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Dagmar; *Dist.* Cook. *Ref.* B.D.

7879. ——. *Assoc.with* Wolfram, Scheelite, Molybdenite, Native Bismuth, and Bismite, with traces of Cuprite, Malachite, Iron Pyrites, Hematite, and Limonite, in quartz. *Loc.* Eight-mile Mountain, 8 miles N.N.W. of Fossilbrook, 28 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd or Tate; *Dist.* Cook. *Ref.* B.D.

7880. ——. *Assoc.with* Wolfram, Molybdenite, Wad, Native Bismuth, Bismutite, with traces of Copper Pyrites, Tenorite, Iron Pyrites, Hematite, etc., in defined quartz lodes, in greisen and mudstone. *Loc.* Rosedale Wolfram Mine, nr. Rosedale, 34 miles N.W. of Bundaberg, on North Coast line. *Co.* Flinders; *Dist.* Port Curtis. *Ref.* B.D.

Tunis Cr. Bore. *See under* Artesian Bores. No. 379.

Tunka Bores. *See under* Artesian Bores. Nos. 169, 177.

Tunnel, nr. Southport. *Min.Ref.* Gold, *see* 4231; Iron Pyrites, 5362; Silver, 7513.

—— Reef (Maid of Erin Mine), Eidsvold Goldfield. *Min.Ref.* Bismite, *see* 316; Copper carbonate, 1882; Gold, 3644.

Turgite. *Syn.* Hydrohematite. *Compo.,* Hyd. sesquioxide of iron. *Colour,* reddish black. *Lustre,* Sub-metallic, also dull, earthy. *Streak,* red. *H.* = 5-6. *Sp.gr.* = 4·29-4·49. *Contents* (*max.*), Iron 66 per cent.

7881. ——. *Assoc.with* Copper Pyrites, Redruthite, Tile Ore, Malachite, Chrysocolla, Hematite, and Limonite, in quartz, calcite, and gossan. *Loc.* Belfast M.L. (303), 10 chains S.E. of Cloncurry Road, 2 miles N.N.E. of Mt. Start, 21 miles S.S.W. of Cloncurry, Belfast Group. *Co.* Selwyn; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 215, pp. 120-122 (1908).

7881A. ——. *Assoc.with* Gold, Native Copper, Copper Pyrites, Malachite, Atacamite, Chrysocolla, Dioptase, Iron Pyrites, Limonite, Göthite, Ironstone, Calcite, Chlorite, and Selenite, in quartzite, slate, and limestone. *Loc.* Mt. Wheeler M.L. (351, etc.), Mt. Wheeler Group, Soldier's Cap, 25½ miles S.E. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 219-224 (1908).

7882. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, and Chrysocolla, and Limonite, in schist and quartz. *Loc.* Brilliant Copper M.L. (588) (Tharsis Group), Duck Cr., 1½ mile N.W. of Mt. Start, 18 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 114, 115 (1908).

7883. ——. *Assoc.with* Redruthite, Malachite, Siderite, with traces of Gold and Silver, in chloritic schist and quartz. *Loc.* Noontide Copper M.L. (239), Pioneer Chief Group, W. of Cone Cr., ½-mile N. of Duck Cr., nr. Mt. Start, 27 miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 129, 130 (1908).

7884. ——. *Assoc.with* Copper Pyrites, Redruthite, Malachite, Chrysocolla, and Limonite, in slate and quartz. *Loc.* Highland Mary Copper M.L. (531), Ready Rhino Group, Duck Cr., 23½ miles S.W. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 91-93 (1908).

7885. ——. *Assoc.with* Native Copper, Copper Pyrites, Redruthite, Malachite, Chrysocolla, Iron Pyrites, Limonite, Calcite, and Ferro-Calcite, in quartz, quartzite, and limestone. *Loc.* Florence R. Copper Leases, ½-mile W. of Hampden Rd., 33 miles S. of Cloncurry. *Co.* Selwyn (*ante*). *Ref.* G.S.Q. Pub. 215, pp. 69-78 (1908).

7886. ——. *Assoc.with* Malachite. *Loc.* Flori's Copper Lode, Perry Scrub, 15 miles S. of Gin Gin, Bundaberg-Mt. Perry Rail. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* L.C.B.

7887. ——. *Assoc.with* Magnetite. *Loc.* Seabrook's, Oaky Cr., nr. Degilbo, 54 miles W. of Maryborough, Gayndah Br. Rail. *Co.* Cook; *Dist.* Burnett.

7888. ——. *Assoc.with* Limonite. *Loc.* Scotland Hills, 5 miles S. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* Burnett. *Analysis:* Iron = 33·4, Silica and insoluble = 35·7, Phosphorus = 0·1 per cent. *Ref.* G.S.Q. Pub. 194, p. 50 (1904).

7889. ——. *Assoc.with* Chlorite. *Loc.* On hill, 1 mile N.E. of junction of Cadarga and Auburn Rivers. *Co.* Newcastle; *Dist.* Burnett.

7890. ——. On ridge N. of Coochee Cr., Cooranga Stn., 20 miles W.S.W. of Gayndah, 110 miles (by rail and road) W. of Maryborough, Gayndah Br. Rail. *Co.* Newcastle (*ante*). *Ref.* L.C.B.

7891. ——. *Assoc.with* Cassiterite and Chlorite. *Loc.* Black Rock Tin Mine, Eureka Cr., nr. Stannary Hills (br. of Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 125, p. 39 (1897).

7892. ——. *Assoc.with* Cassiterite. *Loc.* Comet Tin Mine, Irvinebank, 10 miles S.W. of Stannary Hills, 12 miles W.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 58 (1887).

7893. ——. *Assoc.with* Calcite. *Loc.* Por. 4064, North Branch, Pittsworth, 36 miles (by rail) S.W.byS. of Toowoomba (Pittsworth Br. Rail.). *Co.* Aubigny; *Dist.* **Darling Downs.** *Ref.* L.C.B.

7894. ——. *Assoc.with* Göthite and Limonite, in basalt. *Loc.* Por. 1847, Rolleston, 3 miles N.E. of Pittsworth Rail. Stn., 39 miles (by rail and road) S.W.byS. of Toowoomba. *Co.* Aubigny (*ante*). *Analysis:* Iron = 49·9 per cent. *Ref.* G.S.Q. Pub. 194, pp. 62, 63 (1904).

7894A.——. *Assoc.with* Limonite, in basalt. *Loc.* Por. 2110, Rolleston, few chains W. of Green Hills Rail. Stn. (Pittsworth Br. line), 32 miles (by rail) S.W.byS. of Toowoomba. *Co.* Aubigny (*ante*). *Ref.* G.S.Q. Pub. 194, p. 63 (1904).

7895. ——. *Assoc.with* Limonite and Göthite, in basalt. *Loc.* Por. 2188, Rolleston, 1 mile S.S.E. of Green Hills Rail. Stn. (Pittsworth Br. line), 36 miles (by rail and road) S.W.byS. of Toowoomba. *Co.* Aubigny (*ante*). *Analysis: See* Limonite. *Ref.* G.S.Q. Pub. 194, p. 63 (1904).

7896. ——. *Loc.* 6 miles N. of Silver Spur, Texas, 49 miles W.S.W. of Stanthorpe. *Co.* Clive; *Dist.* Darling Downs. *Ref.* L.C.B

7897. —— (massive). *Loc.* Pors. 773 and 14v, Robinson, Mt. Sturt, 2 miles N.N.W. of Yangan, Killarney Br. Rail. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 186, p. 20 (1903).

7898. ——. *Assoc.with* Cassiterite. *Loc.* Blair's Claim, Coolgarra, 12 miles (by coach) N.E.byN. of Mt. Garnet, Chillagoe Br. Rail., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 59 (1887).

7898A.——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Limonite, Ironstone, and Galena, in quartz. *Loc.* Broken R. Gold and Silver Co.'s Mine, Bee Cr. Diggings, Eungella Goldfield, 10 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pubs. 54, pp. 2, 3 (1889), 229, pp. 31, 32 (1910).

7899. ——. *Assoc.with* Coal. *Loc.* Federal Colliery, Blair Athol, 11½ miles N.W. of Clermont. *Co.* Clermont; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pub. 201, p. 55 (1906).

7900. —— (siliceous). *Loc.* Pors. (293 and 333), Par. of Brassal, Pine Mt., 7 miles (by rail) N.N.W. of Ipswich (Brisbane-Valley line). *Co.* Churchill; *Dist.* **Moreton.**

7901. Turgite. *Assoc.with* Calcite. *Loc.* Por. (1), Dugandan, 59 miles S.S.W. of Brisbane Fassifern Br. Rail. *Co.* Churchill (*ante*). *Ref.* L.C.B.

7902. ——. *As pseudomorph after* Iron Pyrites, in altered sedimentary rocks. *Loc.* School Reserve, Upper Kholo, 3 miles N. of Ipswich. *Co.* Stanley; *Dist.* Moreton. *Ref.* L.C.B.

Turkey's Nest, Gowrie Cr., Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3312.

Turquoise. *Compo.*, Hyd. phosphate of alumina. *Colour*, blue, green, bluish-green. *Lustre*, somewhat waxy. *Streak*, white or greenish. *H.* = 6. *Sp.gr.* = 2·6-2·83.

Mineral Note: Blue Turquoise is rare, but the green variety, which has been proved to contain vanadium, is common. On exposure the blue variety generally becomes greenish, and the green is inclined to become greyish and yellowish. Analyses show that the percentages (omitting silica present as an impurity) are as follows:—Moisture, 16·7; Phosphoric Acid, 30·6; Alumina, 26·7; Ferrous Oxide, 2·2; Copper, nil; Vanadium, trace. The mineral principally occurs as small veins and patches in association with Apatite and Quartz in a belt of quartzites and shales exposed about the shores and islands of Keppel Bay, near Rockhampton, the belt passing through Curtis Island and other islands in the vicinity to the mainland about Emu Park. Traces are also to be seen in some of the road cuttings about Brisbane. All the occurrences at Brisbane, Curtis Island, Keppel Bay, and Emu Park being in strata belonging to the Devonian System.

Uses: Very little of the Turquoise found in the State is of value, being generally too discoloured for gem-making. Blue Turquoise, although occasionally of good quality, is usually irregular in colour, and becomes greenish with wear.

7902A. Turquoise (green). In small veinlets in Carbonaceous Slate. *Loc.* 92-mile Cutting, on Gayndah-Mundubbera line (under construction). *Co.* Mackenzie; *Dist.* Burnett. *Ref.* B.D.

7903. ——(?) As small veins. *Assoc.with* Quartz, in slates. *Loc.* Road Cutting, under English Cathedral, Adelaide street, Brisbane North. *Co.* Stanley; *Dist.* **Moreton.** *Analysis* (Hall): Phosphoric acid = 48·25 per cent.; Alumina = 29·07 per cent.; Vanadium = trace; Loss on ignition (H_2O) = 23·61 per cent.—100·93 per cent. *Ref.* P.R.S.Q., vol. 10, p. 13 (1893), G.S.M. and Q.M.

7904. ——. Quoin Is., S. of Curtis Is., 3 miles N. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 190, p. 11 (1904).

7905. —— (bluish green). *Assoc.with* traces of Apatite, in quartzite and altered shales. *Loc.* Keppel Rocks, Keppel Bay, 17 miles N.E. of Broadmount Rail. Stn., 36 miles E. of Rockhampton. *Co.* Deas Thompson; *Dist.* Port Curtis. *Ref.* A.R., p. 140 (1908), and G.S.M. *See below* (No. 1) for analysis.

7906. —— (blue and green) (in matrix). *Assoc.with* traces of Apatite, in quartzites and altered shales. *Loc.* and *Ref.* (*ante*).

7907. —— (brown). *Assoc.with* traces of Apatite, in quartzites and altered shales. *Loc.* and *Ref.* (*ante*). *See below* (No. 2) for analysis.

7908. —— (greenish brown matrix). *Assoc.with* traces of Apatite, in quartzites and altered shales. *Loc.* and *Ref.* (*ante*). *See below* (No. 3) for analysis.

Analyses: (1) 7905, (2) 7907, (3) 7908.

	Per Cent.		
	(1)	(2)	(3)
Moisture	3·6	2·2	2·2
Combined Water (loss on ignition) ...	15·6	15·7	15·2
Silica (SiO_2)	12·6	30·5	31·5
Alumina (Al_2O_3) ...	30·7	16·2	16·0
Iron Oxide (FeO) ...	2·6	5·6	5·4
Lime (CaO)	Nil	1·3	1·3

	Per Cent.		
	(1)	(2)	(3)
Magnesia (MgO) ...	Nil	Nil	Nil
Phosph. Acid (P_2O_5)...	35·2	25·9	26·0
Vanadium	Trace	Trace	Trace
Copper	Nil	Nil	Nil
	100·3	97·4	97·6

7909. —— (green). In slates and quartzites. *Loc.* Mouth of Cawarral (Ross) Creek, 5 miles S. of Emu Park, 37 miles (by rail and road) E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 143, p. 15 (1899).

7910. ——. *Assoc.with* Apatite. *Loc.* Emu Park, 32 miles N.E.byE. of Rockhampton, Central Rail. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 190, p. 10 (1904).

7911. —— (green). In slates and quartzites. *Loc.* Divided Island, Keppel Bay, 7 miles E.by.S. of Emu Park, 38 miles N.E. of Rockhampton *Co.* Livingstone (*ante*). *Ref.* B.D.

7912. —— (green). In slates and quartzites. *Loc.* Wedge Island, Keppel Bay, 4 miles E. of Emu Park, 35 miles N.E. of Rockhampton. *Co* Livingstone (*ante*). *Ref.* B.D.

7913. ——. Mt. Cobalt, Black Snake, 7 miles S.S.E. of Kilkivan. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.M.

Turtle Island, 2½ miles N. of Gladstone. *Min.Ref.* Manganese-dioxide, *see* 6471.

Turnworth Bore. *See under* Artesian Bores. No. 206.

Twaddle Bores, Stewart's Creek. *See under* Coal Bores.

Tweed Heads, 69 miles (by rail) S.E. of Brisbane. *Min.Ref.* Gold (alluvial), *see* 3372; Magnetic Iron Sand, 6034; Monazite, 6882; Sphærosiderite, 7422.

Geological Note: Basalt occurs throughout the neighbourhood, and forms the headland known as Point Danger. *See under* Point Danger for note on the occurrence of common opal in the basalt.

—— River, S.E. of Brisbane. *Min.Ref.* Monazite, *see* 6882; Osmiridium, 7057; Platinum, 7073A.

Tweed's Sel., Calico Cr., S. of Gympie. *Min.Ref.* Barytes, *see* 282A.

Tweedsmuir Bore. *See under* Artesian Bores. No. 332.

Twelve-mile Bores. *See under* Artesian Bores. Nos. 57, 242, 334.

Twelve Mile Centre, Croydon Goldfield. *Includes* Jubilee, Lady Lottie, Apex, President, May Belle, Colleen Bawn, Golden Fleece, Ross-shire, Golden Spur, Rising Sun, Oriental, and Gem Reefs. *Min.Ref.* Cerussite, *see* 1188A; Galena, 2711A-2711C; Gold, 3553-3557; Iron Pyrites, 4964, 4965.

—— Creek, br. of Tate R., nr. Fisherton. *Min.Ref.* Cassiterite, *see* 940.

—— ——, 7 miles W. of Gilberton, Etheridge Goldfield. *Min.Ref.* Erythrine, *see* 2620.

—— —— Diggings, 12 miles S. of Copperfield. *Min.Ref.* Gold, *see* 4162.

Twenty-mile Bores. *See under* Artesian Bores. Nos. 114, 153, 245.

Two-mile, N.W. of Gympie. *Min.Ref.* Arsenic (native), *see* 103; Gold (alluvial) 3419, (reef) 4489, 4494; Stibnite, 7658.

—— Creek, Coen R., Coen Goldfield. *Min.Ref.* Gold (alluvial), *see* 3208.

—— ——, Sellheim Mineral Field. *Min.Ref.* Calcite, *see* 511; Cerussite, 1290; Clay, 1576; Galena, 3015; Minium, 6634.

—— ——, 3 miles N.E. of Koorboora. *Min.Ref.* Coal, *see* 1612A.

—— —— Diggings, Blackfellow's Gully, Cloncurry. *Min.Ref.* Bismuth, *see* 317; Gold (alluvial) 3182, (reef) 3475; Ironstone, 5492; Manganese-dioxide, 6392.

—— Diggings, head of Fire Cr., Raglan Goldfield. *Min.Ref.* Gold (alluvial), *see* 3386, 3389.

—— Gold Mines Lease (1220) (Peter and Paul and All Serene Reefs), Gympie Goldfield. *Min.Ref.* Gold, *see* 4489; Arsenic (native), 103.

—— Head Station Bore. *See under* Artesian Bores. No. 334.

—— and Seven-mile Diggings, Clermont Goldfield. *Min.Ref.* Gold, *see* 3290; Ironstone, 5590.

Two Sports M.F. (2874), Longamundi Group, Cloncurry. *Min.Ref.* Copper (native), *see* 1973; Cuprite, 2380; Limonite, 5744; Malachite, 6074.

Tygum, W. of Logan R., nr. Waterford Rail. Stn. *Min.Ref.* Coal, *see* 1777A.

Tygum Bore. *See under* Coal Bores.

Typhinnia Bores. *See* Wallaroo *under* Coal Bores.

Tyrconnel Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Tyrell's Shaft (in gully near), 3 miles S. of 41-mile peg, Cooktown Railway. *Min.Ref.* Coal, *see* 1610.

Tyrewhitt's Bore. *See under* Artesian Bores. No. 361.

Tyson Bore. *See under* Artesian Bores. No. 352.

Uanda Co. Mitchell Dist. *See map*, Pl. 18.

—— Run Bores. *See under* Artesian Bores. Nos. 174, 229, 427, 428.

Ukalunda. *See* Eukalunda.

Ulam Goldfield—

SITUATION: *See maps*, Pls. 2, 3. The Goldfield is about 3 miles S. of Toonda Rail. Stn. (N. Coast line), 44 miles (by rail and road) W.N.W. of Gladstone. *Co.* Deas Thompson; *Dist.* Port Curtis. Centre about *Lat.* 23° 42′ S.; *Long.* 150° 42′ E.

DISCOVERY: About middle of 1893.

POPULATION: Included in Rockhampton returns.

PROCLAMATION OF FIELD: First gazetted, 22nd February, 1894; last alteration, 17th September, 1903, as follows:—Commencing at the north-west corner of portion 36V, parish of Ultimo, and bounded thence on the south by a line bearing east seven miles; on the east by a line bearing north to the Rockhampton-Gladstone Trial Survey line; on the north-east by that line north-westerly to the south boundary of portion 1649, parish of St. Jose, by the south and west boundaries of that portion and a line north to Inkerman Creek, by that creek westerly to a branch creek about three miles in a straight line, by that branch creek upwards to the south-east corner of portion D, by the south boundary of that portion north-westerly about sixty chains; and on the west by a line passing along the east boundaries of portions 20V, 19V, and 2134, south to the point of commencement.

AREA: 28,160 acres (44 sq. miles).

MINERAL STATISTICS: Gold. *Included in* "Other Goldfields" *in stat. tables and diagram*, Pls. 36, 46, 46A, 47. No separate records.

MINERAL REFERENCES: Gold (alluvial) 3390, (nugget) 3445A, (reef) 4298, 4309; Lead (Galena), 3053-3058; Copper (carbonate), 1957; Manganese (dioxide), 6473; Iron (Iron Pyrites) 5391-5398, (Ironstone) 5618-5620, (Limonite) 5909.

GEOLOGICAL NOTE: The country rocks comprise slates, shales, and limestones of undetermined age, quartzites of probably Gympie Formation, and intrusive diorite, the quartzites resting unconformably on the other sedimentary rocks. The reefs, which traverse both sedimentary rocks and diorite, and usually strike north and south, are generally of quartz, but some are made up of a large felsitic formation poor in gold. *See* G.S.Q. Pub. No. 99 for details.

GEOLOGICAL PUBLICATIONS: Report No. 99 (1894). *See under* Geol. Surv. Pub. List for title.

WARDEN and INSPECTOR OF MINES: Both stationed at Rockhampton.

REPORTS: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Ularunda Bore. *See under* Artesian Bores. No. 426.

—— Co. Maranoa Dist. *See map*, Pl. 12.

Ulogie (Par. of) (Bull Cr.), nr. Rockhampton. *Min.Ref.* Copper, *see* 1856; Gold, 4310.

Ulster Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1126; Mispickel, 6740.

—— —— ——, Watsonville. *Min.Ref.* Cassiterite, *see* 920; Chlorite, 1441; Mispickel, 6696.

Umbiram Sub-artesian Bore. *See under* Artesian Bores. No. 287.

Una Group, Dugald R., Cloncurry. *Includes* Una, Una N., Una S., and Mt. Leslie M.Ls. *Min.Ref.* Cuprite, *see* 2381; Limonite, 5746; Malachite, 6077.

—— M.L. (280), Una Group, Cloncurry. *Min.Ref.* Cuprite, *see* 2381; Limonite, 5746; Malachite, 6077.

Uncle Leaper P.C., Alligator Cr. Goldfield, S.E. of Mackay. *Min.Ref.* Gold, *see* 4096.

Uncle Sam Prov. Goldfield, 24¼ miles S.byE. of Gladstone. *See* Pls. 2, 3, 34. *Min.Ref.* Gold, *see* 4295A.

—— Tom Gold Reef, Cloncurry. *Min.Ref.* Calcite, *see* 450; Gold, 3456; Hematite, 4673; Siderite, 7401; Tourmaline, 7813.

Unconditional Sel., 189v, Bore. *See under* Artesian Bores. No. 173.

Under Secretary for Mines (Annual Report of). *See* "Annual Reports of the Department of Mines."

Under Secretaries for Mines (List of)—

	Term of Office.
Geo. L. Lukin	1878 to 1880.
Edward Deighton	1880 to 1887.
Glen Cameron (acting)	1887 to 1891.
P. F. Sellheim	1891 to 1899.
A. R. Macdonald	1899 (in office).

Undercliffe Bore. *See under* Artesian Bores. No. 229.

Undeveloped Mineral Country. *See under* Prospecting for Minerals.

Undilla Co. Burke Dist. *See map,* Pl. 20.

Union Extended Lease (511) (Monkland Reef), Gympie Goldfield. *Min.Ref.* Gold, *see* 4490.

—— Mine, Cawarral Goldfield. *Min.Ref.* Calcite, *see* 535A; Gold, 4326; Iron Pyrites, 5403; Tourmaline, 7870.

—— ——, Far Fanning. *Min.Ref.* Gold, *see* 3995.

—— ——, Mt. Morgan Goldfield. *Min.Ref.* Calcite, *see* 549; Gold, 4382; Iron Pyrites, 5436; Schorl, 7876; Tourmaline, 7872.

—— Reef, Mt. Davenport, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4046; Iron Pyrites, 5261; Hematite, 4738.

—— ——, Hodgkinson Goldfield. *Min.Ref.* Galena, *see* 2765; Gold, 3765; Mispickel, 6686; Iron Pyrites, 5059; Zinc Blende, 8080.

—— ——, Nuggety Gully, Mt. Britten Goldfield. *Min.Ref.* Calcite, *see* 521; Gold, 4188.

—— ——, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3680.

—— Opal Mine, Keeroongooloo Run. *Min.Ref.* Opal (precious), *see* 6946A.

—— Silver Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 56; Cerussite, 1283; Galena, 2999; Gold, 4094; Iron Pyrites, 5287; Minium, 6629; Siderite, 7411; Zinc Blende, 8165.

—— Jack Mine, Charters Towers Goldfield. *Min.Ref.* Zinc Blende, *see* 8134.

—— —— Consld. Mines (Victoria Reef), Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2915; Gold, 3941; Iron Pyrites, 5212.

—— —— Mine, Ravenswood Goldfield. *Min.Ref.* Gold, *see* 4031; Iron Pyrites, 5249.

—— —— Reef, Yatton Goldfield. *Min.Ref.* Gold, *see* 4180.

Unique Mine. *See* Don Jon Mine.

United Copper Mine, Moonmera. *Min.Ref.* Tenorite, *see* 7742.

—— Reefs, Black Snake, Kilkivan Goldfield. *Min.Ref.* Copper Pyrites, *see* 2327; Tourmaline, 7873. SMELTING WORKS: *See under* Smelting Works in Queensland.

—— Rise Reef, Monal Goldfield. *Min.Ref.* Gold, *see* 4262.

University of Queensland. Instruction in all classes is available at the University to all students, but degrees are not granted to students unless they have matriculated. There are two degrees open to geological and mining students—namely, Bachelor of (Mining) Engineering, and Bachelor of Science, the former being a four years' course, the latter a three years' course. The calendar of the University, containing all information about fees, subjects, terms, scholarships, exhibitions, etc., is obtainable from F. W. S. Cumbrae-Stewart, B.A., Registrar, University, Brisbane.

Upper Brisbane River, nr. Brisbane. *Min.Ref.* Amethyst, *see* 7171.

—— Burdekin, 32 miles S.W. of Cardwell. *Min.Ref.* Augite, *see* 142; Cassiterite, 1167; Chalcedony, 1345; Hematite, 4744; Limonite, 5879; Magnetite, 6013; Olivine, 6927.

—— Burnett, N.W. of Gayndah Rail. Stn. *Min.Ref.* Halite, *see* 4652.

—— Camp, Miclere, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3287.

—— —— Bore. *See under* Artesian Bores. No. 384.

—— Cape Diggings, Cape R. Goldfield. *Min.Ref.* Calcite, *see* 504; Galena, 2950, 2951; Gold (alluvial) 3272A, (nugget) 3437, (wire and reef) 4059-4062; Iron Pyrites, 5268, 5269; Ironstone, 5553, 5554; Silver, 7489.

—— Coomera, S.E. of Brisbane. *Min.Ref.* Iron Pyrites, *see* 5351A; Zinc Blende, 8178A.

—— Dawson River, N.W. of Taroom. *Min.Ref.* Alunogen, *see* 6; Epsomite, 2618; Gold, 4171; Hornblende, 4840; Ilmenite, 4903; Iron Pyrites, 5327; Satin Spar, 4636.

—— Flinders River. *See under* Flinders River.

—— Fullarton Sub-artesian Bore. *See under* Artesian Bores. No. 161.

—— Herbert River. *See* Wild River.

—— Mary Goldfield. *See* Gympie Goldfield.

—— Mill Mill Bore. *See under* Artesian Bores. No. 391.

—— Mulgrave River, Mulgrave Goldfield. *Min.Ref.* Gold (alluvial), *see* 3220A, 3235.

—— Percy River, br. of Gilbert R., Etheridge Goldfield. *Min.Ref.* Agate, *see* 1370; Gold, 3798.

—— Walker Cr. Bore. *See under* Artesian Bores. No. 376.

Uran-Mica. *Syn.* Chalcolite, *which see.*

Uranate of uranyl, lead, etc. *See* Pitchblende.

Uraninite. *Syn.* Pitchblende, *which see.*

Uranium (U.). *Atom.Wt.* = 238·5; *Sp.gr.* = 18·7.

MINERALS: *See* Chalcolite and Pitchblende.

USES: Metallic Uranium has no industrial application, but its compounds are used in photographic development and as reagents in chemical work. It is also used in enamelling processes, porcelain painting, and glass-staining, yellow being the principal colour produced. Pitchblende is the main source of Uranium, as it is of Radium, but only small quantities have been found in the State. There are, however, large areas where prospecting operations should be encouraged. *See* further note under Radium. Ten per cent. of uranium oxide in an ore would be considered to be a low percentage.

—— phosphate. *See* Chalcolite.

Vakuta Island (Trobriand Group), Brit. New Guinea. *Min.Ref.* Calcite (stalactitic), *see* 611.

Valdare Opal Mines, N.N.W. of Toompine. *Min.Ref.* Precious Opal, *see* 6943.

Valentine Creek, Port Clinton. *Min.Ref.* Coal, *see* 1801.

Valentinite. *Compo.*, Antimony trioxide. *Colour*, snow-white. *Lustre*, adamantine. *H.* = 2·5-3; *Sp.gr.* = 5·5. *Contents* (*max.*), Antimony 83 per cent.

7914. ——. *Assoc.with* Stibnite and Cervantite. *Loc.* St. John's Cr. Goldfield, 16 miles S.W. of Eidsvold. *Co.* Wicklow; *Dist.* Burnett. *Ref.* P.R.S.Q., vol. 4, p. 45 (1887).

Valley, W. of Mt. Eurie, nr. head of Dugald R., Cloncurry. *Min.Ref.* Asbolane, *see* 117; Cuprite, 2382; Garnet, 3150; Hematite, 4668; Ironstone, 5481; Labradorite, 5717; Malachite, 6075.

—— Bore. *See under* Artesian Bores. No. 207.

—— of Hills, Cape York Peninsula. *Min.Ref.* Gold, *see* 3827B; Silver, 7468B.

—— of Lagoons Run, S.E.byE. of Mt Surprise Rail. Stn. *Min.Ref.* Anglesite, *see* 42C; Cerussite, 1230A; Galena, 2953B; Malachite, 6288D; Tile Ore, 2563A.

Vanadium (V.). *Atom. Wt* = 51·06; *Sp.gr.* = 5·5. *Colour*, grey-metallic.

Notes: The alloy, ferro-vanadium, when added to steel in the procees of manufacture, produces a toughness and hardness which annealing does not destroy. It is specially useful in steels which require much bending, and high-carbon vanadium steel makes good saws, cutters, etc. Metavanadic acid has been used to some extent as a gold bronze, while vanadic chloride is used in fabric printing, and the trioxide in dyeing. The occurrence of vanadium in the clays around Brisbane is made apparent by the greenish and yellowish discoloration of the bricks and other ware made from them. The greenish colour appears soon after the bricks are taken from the kiln, and this in the course of a few months changes to a bright yellow. In about six months the discoloration entirely disappears. For commercial purposes vanadium ores require to contain more than 15 per cent. of vanadium pentoxide.

7915. ——. As the colouring substance in Turquoise (?). Adelaide Street Cutting, Brisbane North. *Co.* Stanley; *Dist.* **Moreton.** *Ref.* B.D.

7916. ——. As the colouring substance in Turquoise (green). *Loc.* Keppel Rocks, Keppel Bay, 17 miles N.E. of Broadmount, 36 miles E. of Rockhampton. *Co.* Deas Thompson; *Dist.* Port Curtis.

7916a. ——. Said to be found in traces between the laminæ of Molybdenite. *Loc.* Gilmore Mine, Wolfram Camp. *Co.* Hodgkinson; *Dist.* Cook.

Vanapa River (17 miles up), Brit. New Guinea. *Min.Ref.* Gold (alluvial), *see* 3431; Ilmenite, 4914; Magnetite, 6068; Mica, 6565; Topaz, 7810; Zircon, 8228.

Vance's Bore. *See under* Artesian Bores. No. 154.

Vanderbilt Reef, Carron, Croydon Goldfield. *Min.Ref.* Gold, *see* 3460.

Variegated Copper Ore. *Syn.* Bornite, *which see.*

Vasca de Gama Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

Venda Downs Bore. *See under* Artesian Bores. No. 373.

Venture Shaft. 36 chs. S.W. of Mary River, at Channon St. Bridge, Gympie Goldfield.

Venture Silver Mine, Argentine Silver Field. *Min.Ref.* Anglesite, *see* 57; Cerussite, 1284; Galena, 3000; Iron Pyrites, 5288; Minium, 6630; Mispickel, 6758.

—— —— ——, Sellheim Mineral Field. *Min.Ref.* Galena, *see* 3021; Gold, 4147; Minium, 6639; Mispickel, 6769.

—— Reef, Golden Valley, Croydon Goldfield. *Min.Ref.* Gold, *see* 3523; Iron Pyrites, 4954.

—— ——, Marengo Goldfield. *Min.Ref.* Azurite, *see* 215a; Copper Pyrites, 2240a; Gold, 4077; Iron Pyrites, 5276; Malachite, 6290; Silver, 7490.

—— ——, Normanby Goldfield. *Min.Ref.* Gold, *see* 4135a; Iron Pyrites, 5310.

Venus Flat, Bath Cr., Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3358.

—— Hotel, Bathampton Cr., Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3355-3359.

—— Leads, Clermont Goldfield. *Includes* Hurley's, Wet, Rip and Tear, Blacksmith Gully, and Venus Leads. *Min.Ref.* Gold (alluvial), *see* 3359.

—— P.A., Mt. Steadman. *Min.Ref.* Gold, *see* 3606a; Molybdenite, 6822; Molybdite, 6869; Telluride of Gold, 7699.

—— ——, Mt. Surprise. *Min.Ref.* Kaolin, *see* 5680; Penninite, 7061; Rutile, 7330.

—— Reef, Clermont Goldfield. *Min.Ref.* Gold, *see* 4156.

Verde Antique Point, Hunter Island. *Min.Ref.* Marble, *see* 598.

Vergemont Co. Mitchell Dist. *See map,* Pl. 18.

Vermiculite. *Compo.*, Hyd-silicate of alumina, iron, and magnesia. *Colour*, bronze-yellow. Micaceous. *H.* = 1-2; *Sp.gr.* = 2·7.

7917. ——. In decomposed granite. *Loc.* Railway Cutting, Moonmera, Mt. Morgan Rail., 20 miles S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* B.D.

——. This mineral is of common occurrence in decomposed granitic rocks.

Vernon Downs Bore. *See under* Artesian Bores. No. 332.

Vesuvius Tin Claim, No. 1, Thompson's Cr., 10 miles S. of Watsonville. *Min.Ref.* Cassiterite, *see* 1148.

Veteran Reef, 7 miles N.N.W. of Gympie. *Min.Ref.* Galena, *see* 3091; Gold, 4546; Iron Pyrites, 5469.

Victo Bore. *See under* Artesian Bores. No. 225.

Victor Co. Cook Dist. *See map*, Pl. 8.

—— Mine, Stanthorpe. *Min.Ref.* Cassiterite, *see* 1027.

—— Tunnel Gold Mine, Normanby Goldfield. *Min.Ref.* Copper Pyrites, *see* 2263; Gold, 4136; Iron Pyrites, 5311; Marcasite, 6510; Mispickel, 6765.

Victoria Lead, "The Springs," Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3335, 3352, (nugget) 3441A; Marcasite, 6514.

Victoria Lease Bores. *See under* Artesian Bores. No. 429.

—— Mine, Victoria Reef, Bower-Bird Goldfield. *Min.Ref.* Copper Pyrites, *see* 2066; Gold, 3461; Iron Pyrites, 4920; Malachite, 6088.

—— —— (No. 1 North), Bower-Bird Goldfield. *Min.Ref.* Copper carbonate, *see* 1874; Copper Pyrites, 2065; Gold, 3462; Iron Pyrites, 4921.

—— ——, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2916; Gold, 3942; Iron Pyrites, 5213; Mispickel, 6743.

—— ——, Coen Goldfield. *Min.Ref.* Gold, *see* 3698.

—— ——, Gebangle. *Min.Ref.* Copper carbonate, *see* 1879; Gold, 3581; Iron Pyrites, 4982.

—— ——, Silverfield. *Min.Ref.* Galena, *see* 2781; Stibnite, 7628.

—— —— (Amalgamated), Silverfield. *Min.Ref.* Galena, *see* 2782; Iron Pyrites, 5061; Zinc Blende, 8083.

—— ——, Coolgarra. *Min.Ref.* Cassiterite, *see* 1057; Galena, 2847; Iron Pyrites, 5136.

—— ——, Watsonville. *Min.Ref.* Cassiterite, *see* 921; Mispickel, 6697; Wolfram, 7955.

—— and Caledonia Block Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2917; Gold, 3943; Iron Pyrites, 5214.

—— and Queen G.M. Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2918; Gold, 3944; Iron Pyrites, 5215.

—— and Queen Mine (512 feet), Charters Towers. *Min.Ref.* Galena, *see* 2918; Gold, 3944; Iron Pyrites, 5215.

—— Reef, Black Snake Goldfield. *Min.Ref.* Copper Pyrites, *see* 2320; Galena, 3072; Gold, 4395; Iron Pyrites, 5443; Mispickel, 6809; Schorl, 7877; Silver, 7538; Zinc Blende, 8209.

—— ——, Mt. Remarkable, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4050; Iron Pyrites, 5263.

—— ——, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, Iron Pyrites, *see* 3975.

—— ——, Georgetown, Etheridge Goldfield. *Min.Ref.* Gold, *see* 3732.

—— ——, Big Hill, Talgai Goldfield. *Min.Ref.* Gold, *see* 3860; Limonite, 5858.

Victory Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2920; Gold, 3946; Iron Pyrites, 5217.

—— —— (Charters Towers G.M.). *Min.Ref.* Galena, *see* 2919; Gold, 3945; Iron Pyrites, 5216.

—— —— (33) (United), Eidsvold Goldfield. *Min.Ref.* Anglesite, *see* 13; Gold, 3655; Iron Pyrites, 5020; Redruthite, 7277; Zinc Blende, 8072.

—— —— (185), Kangaroo Hills Mineral Field. *Min.Ref.* Hematite, *see* 4751; Zinc Blende, 8162.

—— —— (188) (Extended), Kangaroo Hills Mineral Field. *Min.Ref.* Azurite, *see* 219; Malachite, 6309.

—— Mine, Combo Cr., Towalla Goldfield. *Min.Ref.* Gold, *see* 3791; Iron Pyrites, 5085.

—— ——, Ulam Goldfield. *Min.Ref.* Galena, *see* 3058; Gold, 4309; Iron Pyrites, 5397.

—— Reef, Charters Towers Goldfield. *Min.Ref.* Galena, Gold, Iron Pyrites, *see* 3976.

—— ——, Hodgkinson Goldfield. *Min.Ref.* Copper Pyrites, *see* 2142; Galena, 2742; Gold, 3714; Iron Pyrites, 5035.

Vigilant Lease (193), Kangaroo Hills Mineral Field. *Min.Ref.* Ironstone, *see* 5566; Manganese-dioxide, 6443.

Viking Mine, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3678.

—— Reef, Maytown, Palmer Goldfield. *Min.Ref.* Gold, *see* 3681.

Village Blacksmith Mine, Reid's Cr., 12 miles S.E. of Petford Rail. Stn. (Chillagoe line). *Min.Ref.* Cassiterite, *see* 954.

Villers Copper Syndicate, Soda Water Cr., Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2234.

Vindex Bores. *See under* Artesian Bores. No. 430.

Violet Reef, Hamilton Goldfield. *Min.Ref.* Gold, *see* 3708.

Virgin's Refuge Mine, nr. Harper's Hill, Mt. Perry. *Min.Ref.* Copper (ore), *see* 2022.

Viridite. (Chlorite, in part). *Compo.*, Hyd.-silicate of iron and magnesia. *Colour*, greenish. Soft.

7918. ——. *Assoc.with* Gold, Iron Pyrites, Hematite, Magnetite, Mispickel, Native Bismuth, Bismuthinite, Bismutite, Bismite, Manganese-dioxide, Erythrine, Actinolite, Calcite, Chalcedony, and Epidote, in slate and hornblende rock. *Loc.* Biggenden Gold and Bismuth Mine, Mt. Biggenden, 4½ miles W. of Biggenden, 58 miles (by rail and road) W. of Maryborough, Gayndah Br. Rail. *Co.* Cook; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 60 (1890), 173, p. 2 (1902), and 194 (1904).

7919. ——. *Assoc.with* Cassiterite, Steatite, and Serpentine, in quartz lode in diorite and porphyry. *Loc.* St. Patrick Tin Mine, Herberton, 12 miles S.S.W. of Atherton, Cairns Rail., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, pp. 8, 9 (1883).

Vivianite. *Syn.* Blue Iron Earth. *Compo.*, Hyd.-phosphate of iron. *Colour* and *Streak*, bluish, greenish, colourless. *Lustre*, vitreous. *H.* = 1·5-2; *Sp.gr.* = 2·58-2·68.

7920. ——. *Assoc.with* Iron Pyrites. *Loc.* Roger's No. 1 Mine, Golden Gate Reef, 4 miles N.W. of Croydon. *Co.* Surrey; *Dist.* **Burke.** *Ref.* B.D.

7921. ——. In decomposed ferruginous rock. *Loc.* Watsonville, head of Innes Cr., br. of Walsh R., 6 miles W. of Herberton, 7 miles E.S.E. of Stannary Hills, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

7922. ——. Anniversary Mine, Herberton, 12 miles S.S.W. of Atherton, Cairns Rail., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 15, p. 57 (1900).

Von Bremen's Group, Cloncurry. *Includes* Chelmsford, Mt. Brown, Mt. Hare, and Mt. Stanley M. Leases, Isabella, Violet, United, Mt. Stuart, Mt. Cherry, and Emerald M. Claims. *Min.Ref.* Calcite, *see* 470; Copper Pyrites, 2119, 2120; Limonite, 5825, 5826; Malachite, 6188; Redruthite, 7272, 7273; Tile Ore, 2542.

—— Moltke Mine, Leyburn Goldfield. *Min.Ref.* Copper Pyrites, *see* 2197; Gold, 3845; Iron Pyrites, 5120; Talc, 7676.

—— —— Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Vrilya Point, West Coast, Cape York Peninsula. *Min.Ref.* Ironstone, *see* 5527.

Vulcan Mine, Irvinebank. *Min.Ref.* Bismuth (native), *see* 333; Cassiterite, 874; Cerussite, 1191; Chlorite, 1433.

—— Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3753.

Vuna Sub-artesian Bore. *See under* Artesian Bores. No. 329.

Wad. An earthy form of Manganese-dioxide. *See* Psilomelane, Asbolane, and Manganese-dioxide.

Wages. Average Rates in Mining and Metallurgical Occupations.

(*See* further details in Annual Report, Mines Department, 1912.)

Occupation or Trade.	Average Wages per 8 Hours.								
	Metalliferous Mines.						Coal Mines.		
	Southern Division.‡	Central Division§	1st Northern Division‖	2nd Northern Division.¶	Croydon & Etheridge, Far North.	Cloncurry Division.	Southern Division.**	Central Division.††	General Average.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Mines—									
Overseers	..	11 9	16 8	16 4	18 0	..	..	..	15 8
Shift bosses and overmen	10 11	11 6	13 0	13 1	13 10	17 2	10 11	..	12 11
Firemen (in coal mines)	..	..	..	..	..	..	10 4	..	10 4
Bracemen and banksmen	7 6	7 1	9 9	10 7	10 9	13 0	8 1	7 5	9 3
Platmen and pit-bottomers	8 0	8 4	9 8	10 6	10 8	13 0	7 9	..	9 8
Timber-men	9 6	9 2	11 0	12 4	..	14 6	9 6	..	11 0
Roadsmen	8 2	8 4	10 6	10 6	..	..	9 7	..	9 5
Engine-drivers	11 11	9 10	12 6	13 4	13 6	15 0	10 10	9 0	12 0
Machine-men	9 10	10 0½	11 9	13 0	13 2	15 4½	..	..	12 2
Machine-men, assistants	8 8	8 5	9 6	12 1	12 0	14 0	..	..	10 9
Hand-men	8 5	8 5	10 2½	11 10¼	11 10½	13 0	10 4	12 0	10 9
Men working coal-cutters	..	..	..	..	..	..	10 2	..	10 2
Shooting down and filling after coal-cutters†	..	..	..	..	..	..	..	..	..
Hewers*	..	..	..	..	..	..	..	..	..
Truckers and wheelers	7 6	7 8	8 8	10 10	10 4	12 0	9 0	..	9 5
Mullockers	7 2	7 8	8 7	10 2	10 5	12 0	8 0	..	9 2
Pumpmen	..	8 0	..	11 7	..	14 5	9 5	..	10 10
Boys	4 8	4 3	5 4	5 1	10 0	6 6	4 10	..	5 10
Mills and Cyanide Works—									
Foremen and engineers	16 8	9 10	14 9	17 6	14 0	..	..	..	14 6
Amalgamators	11 3	14 11	13 8	..	13 4	..	..	..	13 3
Assistant amalgamators	8 10	..	8 0	..	..	..	..	..	8 5
Engine-drivers	11 3	9 7	12 3	13 1	13 4	..	..	..	11 11
Feeders	7 0	6 6	9 2	9 10	10 2	..	..	..	8 6
Vanner-men and table-men	8 2	7 6	8 4	11 5	10 6	..	..	..	9 2
Truckers, fillers, labourers, and oilers	9 4	7 5	8 9	10 5	10 3	..	..	..	9 3
Cyaniders	13 4	13 4	10 0	..	10 0	..	..	..	11 8
Trimmers	7 5	..	10 0	..	..	..	..	..	8 9
Boys	4 7	4 10	6 0	6 0	7 0	..	..	..	5 8
Smelting and Chlorination Works—									
Foremen	16 10	13 7	..	16 10	..	20 0	..	..	16 10
Shift bosses	11 0	10 7	..	13 7	..	17 2	..	..	13 1
Engine-drivers	11 0	9 10	..	13 3	..	15 4	..	..	12 4
Smelters, furnace-men, vatmen, &c.	8 2	8 1½	..	11 3	..	13 6	..	..	10 3
Truckers and wheelers	..	7 0	..	10 2	..	11 0	..	..	9 5
Testers	9 9	10 7	..	..	..	..	..	..	10 2
Samplers and labourers	9 0	7 5	..	10 0½	..	11 0	..	..	9 4
Boys	3 4	4 10	..	5 6	..	6 0	..	..	4 11
Workshops—									
Overseers, foremen, and engineers	13 4	15 0	15 9	17 7	18 11	20 0	14 3	..	16 5
Boiler-makers, fitters, &c.	7 7	10 4½	13 3	13 1½	15 6	16 3	11 0	..	12 5
Blacksmiths and moulders	9 9	9 7½	12 7	12 1½	13 10	16 3	10 6	..	12 1
Plumbers	..	10 0	11 8	12 3	..	16 3	..	..	12 6
Drill-sharpeners	8 0	9 5	11 1	10 3	12 0	14 6	..	..	10 11
Carpenters and sawyers	10 9	9 7½	12 9	13 2	13 4	15 6	9 9½	..	12 2
Bricklayers	11 6	11 8	..	14 2	..	13 0	10 0	..	12 1
Labourers	8 2	7 1	8 8	10 1	10 6	11 0	8 4	..	9 1
Miscellaneous (on surface)—									
Foremen and overseers	..	12 5	..	13 7	..	..	10 0	..	12 0
Crusher-men	6 11	8 2	10 0	..	..	..	..	..	8 4
Sorters and pickers	4 11	5 10	..	8 3	..	10 10	7 6	..	7 6
Engine and motor drivers	9 3	9 9	13 0	13 0	..	..	10 10	..	11 2
Firemen (at boilers)	8 4	8 6	10 0	10 10	13 10	11 4	8 2	..	10 2
Firewood-truckers, coke-burners	..	8 6	10 0	10 0	10 10½	..	9 0	..	9 10
Carters and drivers	8 7	9 0	9 3	11 4	..	..	8 0	..	9 3
Quarry-men and stone-breakers	8 1½	7 11	..	10 8	10 6	..	..	..	9 3
Labourers, watchmen	7 8½	8 4½	9 6½	10 0½	10 6	10 10	7 9	..	9 3
Whip boys and apprentices	..	4 5½	6 10½	..	..	..	3 4	..	4 10
Boys	5 1	5 0	5 7	5 0	..	..	4 6	..	5 0

* Hewing rate, doing own wheeling: Bundamba, 2s. 6½d. to 4s. 1d. per ton; North Ipswich, 2s. 11d. to 3s. 6d. per ton; Walloon, 4s. 2d. per ton; Purga, 3s. 3d. to 4s. 1¾d. per ton; Rosewood, 2s. 6½d. to 2s. 10½d. per ton; Darling Downs, 3s. 2d. to 4s. 2d. per ton; Wide Bay, 3s. 11d. to 4s. 8d. per ton. Hewing rate, not doing own wheeling, 2s. 6d. per ton.

† Shooting down and filling after machines, 1s. 5d. to 1s. 9d. per ton.

‡ Stanthorpe; Warwick; Gympie; Kilkivan; Eidsvold; Mount Perry.

§ Gladstone; Rockhampton; Mount Morgan; &c.

‖ Charters Towers; Ravenswood; Kangaroo Hills; &c. ¶ Herberton and Chillagoe Fields.

** Maryborough; Ipswich; Darling Downs. †† Clermont; Central Railway.

Waiora Bore. *See under* Artesian Bores. No. 237.

—— Creek Bore. *See under* Artesian Bores. No. 394.

Wairambar Creek, Russell Goldfield. *Min.Ref.* Gold (alluvial), *see* 3227; Platinum, 7072.

Wairuna Co. Kennedy North Dist. *See map*, Pl. 16.

Wakefield Sub-artesian Bore. *See under* Artesian Bores. No. 300.

Waldegrave Co. Maranoa Dist. *See map*, Pl. 12.

Walhalla Reef, Palmer Goldfield. *Min.Ref.* Gold, *see* 3687.

Walker Co. Mitchell Dist. *See map*, Pl. 18.

Walker's Bore. *See under* Artesian Bores. No. 155.

—— Creek, 10 miles W. of Nebo. *Min.Ref.* Coal, *see* 1704. *Geological Note:* Rocks are Bowen coal measures (P.C.) and contain anthracite seam 3 ft. 6 in. thick and of very good quality.

—— Gully, Gympie Goldfield. *Min.Ref.* Gold (alluvial), *see* 3417.

Walla (Par. of), Pors. 856, 917, 1033, 1098, 1187, 1230, 5 miles S.S.W. of Gin Gin Rail. Stn. *Min.Ref.* Jasper, *see* 5650; Jaspopal, 7001; Iron Pyrites, 5438; Kaolin, 5706; Limestone, 694; Manganese-dioxide, 6482-6485; Psilomelane, 7103; Pyrolusite, 7132; Rhodonite, 7321.

Wallaby Creek, br. of Annan R. Heads near Mt. Hartley, passes Rossville, and flows W.byN. into Annan R., about 1½ mile below Helenvale. *Min.Ref.* Cassiterite, *see* 801, 802, 804, 817-823; Chalcedony, 1340; Corundum, 2366; Mispickel, 6668A, 6672; Rock Crystal, 7184; Tourmaline, 7849; Wolfram, 7931, 7934.

—— Point, 1½ mile S. of Mt. Leyshon. *Min.Ref.* Gold, *see* 3982.

Wallace and Eldridge's Claim, Seven-mile Diggings, nr. Nanango. *Min.Ref.* Garnet, *see* 3137; Gold (alluvial), 3367; Ruby, 2364; Sapphire, 2357; Spinel, 7582; Topaz, 7808; Zircon, 8227.

—— Creek Crossing, 3 miles S. of Dugandan Rail. Stn. *Min.Ref.* Clay Ironstone, *see* 1592.

Wallal Bore. *See under* Artesian Bores. No. 205.

Wallaroo Coal Mines. *See maps*, Pls. 10, 11, 33. Three miles S. of Triphinia, Central Rail. line. *Min.Ref.* Coal, *see* 1694, 1695. *See also under* Coal Bores.

GEOLOGICAL NOTE: The rocks in this locality comprise Dawson-Mackenzie Coal Measures of Upper Bowen Formation (Permo-Carboniferous) in which coal seams have been reported to occur. *See* G.S.Q. Pub. No. 155 for position and map.

—— Lease (162), Kangaroo Hills Mineral Fields. *Min.Ref.* Bornite, *see* 428; Cerussite, 1257; Copper Pyrites, 2249; Galena, 2975; Hematite, 4752; Mispickel, 6755; Tile Ore, 2565.

—— M.L. (392), Wee Macgregor Group, Cloncurry. *Min.Ref.* Azurite, *see* 170A; Limonite, 5798; Malachite, 6158; Redruthite, 7253; Tile Ore, 2529.

—— M.F. (634), Mt. Flo. Gold and Mineral Field. *Min.Ref.* Azurite, *see* 235B; Malachite, 6339A.

Wallen Bore. *See under* Artesian Bores. No. 152.

Walli and Chinaman Creeks, nr. Mt. Ubi, W. of Blackall Range. *Min.Ref.* Gold, *see* 4418.

Wallis's Day Dawn Lease, Charters Towers Goldfield. *Min.Ref.* Galena, *see* 2921; Gold, 3947; Iron Pyrites, 5218.

Walloon Bores (no record). *See* Ipswich Coalfield *under* Coal Bores.

Walloon Coal Area, 31½ miles W.byS. of Brisbane. *Lat.*, 27° 37′ S.; *Long.*, 152° 39′ E. *See* Pl. 25. Collieries—Walloon and Caledonia. *Min.Ref.* Coal, *see* 1725-1727. *See* Geol. Note *under* Ipswich.

Wallumbilla Bore. *See under* Artesian Bores. Nos. 53, 106.

Walsh and Tinaroo Mineral Fields. (Now divided into Herberton Gold and Mineral Field and Chillagoe Gold and Mineral Field—by Proclamation, gazetted 13th October, 1909.)

SITUATION: *See maps*, Pls. 8, 9, 16, 17, 22. In Cook and North Kennedy Districts, between *Lat.* 16° and 19°, and *Long.* 143° and 145°.

POPULATION: Estimated (end of 1910), 12,049.

PROCLAMATION OF FIELD: First gazetted, 2nd January, 1882; last, 29th September, 1905. *See* Chillagoe Gold and Mineral Field, and Herberton Gold and Mineral Field for latest Proclamations.

Walsh and Tinaroo Mineral Fields—*continued:*

Area: 8,541,200 acres (13,345⅝ sq. miles).

Principal Mining Centres: Chillagoe, Coolgarra, Fossilbrook, Herberton, Irvinebank, Koorboora, Mt. Garnet, Montalbion, Mungana, Mt. Carbine, Mt. Molloy, Stannary Hills, Newellton (Silver Valley), Watsonville, Wolfram Camp, *which see.*

Other Mining Centres: Bakerville, Boonmoo, Bamford, California Creek, Emuford, Eureka Cr., Four-mile Mountain, Glen Atherton, Glen Linedale, Mareeba, Muldiva, Nettle's Cr., Nymbool, Reid's Cr., Tate R., Thompson Cr., Walsh R., *which see.*

Mineral References: **Gold** (alluvial) 3254, 3255, 3256, (reef) (3668-3677, 3775-3776; **Silver** 7451-7467, 7563, (Cerargyrite) 1178-1183, (Proustite) 7078, (Pyrargyrite) 7112, 7113, (Stephanite) 7602; **Lead** (Cerussite) 1189, 1191-1212, 1219-1225, (Galena) 2758, 2766-2809, 2827a, 2844-2864, (Linarite) 5937, 5938, (Massicot) 6526, 6530, 6533-6537, (Minium) 6580-6592, 6594-6598, (Pyromorphite) 7141-7143, 7145, 7146; **Copper** (Atacamite) 129-131, (Azurite) 186-202, 209-214, (Bornite) 418, 419, (Bournonite) 437, (Chalcanthite) 1318, 1320-1326, 1328-1330, (Chrysocolla) 1517-1520, (Copper) 1842, 1844-1845, (Copper carbonate) 1883, 1887-1898, 1910-1912, (Copper, native) 1991-1994, 1999-2000, (Copper Ores) 2026-2033, 2035-2036, (Copper Oxide) 2047-2048, (Copper Phosphate) 2058, 2059, (Copper Pyrites) 2143, 2153-2176, 2210, 2215a, (Cuprite) 2425, 2428-2441, 2443, 2443a, 2455-2457, (Dioptase) 2583-2584, (Malachite) 6211-6248, (Olivenite) 6917a, 6918 (Redruthite) 7278-7280 (Tenorite) 7720-7724, 7728-7729, (Tetrahedrite) 7760-7768, 7770, (Tile Ore) 2546-2550, 2562-2563; **Tin** (Cassiterite) 830-833, 839-957, 966-970, 1037-1148, (Stannite) 7593-7597; **Bismuth** (native) 329-341, 344-347, (Bismuthinite) 365-369, 372, (Bismutite) 382-395; **Wolfram** 7935-7971a, 7973-7976, 7978-7980, 8006-8030a, (Tungstite) 7878, 7879; **Molybdenite** 6825-6842, 6844, 6845, 6855-6857, (Molybdite) 6870-6871; Scheelite, 7339, 7341, 7343-7353; Antimony, 72-73, (Cervantite) 1306, (Stibnite) 7627-7632, 7639-7640; Manganese (Dioxide) 6407-6412, 6429-6430, (Pyrolusite) 7117-7119, (Rhodochrosite) 7315, (Wad) 7111; **Monazite,** 6874-6877a, 6879, 6880; Rutile, 7327, 7328, 7332; Chalcolite, 1405-1407; Columbite, 1838: Zinc (Goslarite) 4561, (Smithsonite) 7567-7568, (Willemite) 7925, (Zinc Blende) 8081-8090, 8107-8115; Iron (Göthite) 4567, (Hematite) 4709-4720, (Ilmenite) 4899, (Iron Pyrites) 5060-5077, (Ironstone) 5517, 5522-5526, 5528-5531, 5546-5548, (Limonite) 5842-5845, 5872-5874, (Magnetite) 5987-5994, 6005-6007, (Marcasite) 6502-6506, (Mispickel) 6687-6704, 6734-6741, (Ochre, red) 4811-4813 (Ochre, yellow) 5934, (Pyrrhotite) 7155-7158, (Scorodite) 7363-7367a, (Siderite) 7406-7408, (Turgite) 7898, (Vivianite) 7921-7922; Graphite, 4593, 4594, 4596, 4597; **Limestone,** 634-642. Other Minerals—Actinolite, 4859-4861; Amethyst, 7169; Barytes, 267-269, 271; Beryl, 299, 300; Biotite, 304-307; Bronzite, 438; Cairngorm, 7175, 7179-7180; Calcite and varieties, 434-485, 568, 573-574; Chert, 1410-1411; Chlorite, 1430-1443, 1446-1457; Clay, 1569; Corundum, 2371-2372: Dolomite, 2587; Felspar, 2633-2639; Fluorspar, 2657-2681; Garnet, 3099-3112; Gypsum, 4615; Halite, 4654-4656; Halloysite, 4660; Harmotome, 4665; Hornblende, 4832-4834; Hypersthene, 4877; Jasper, 5642; Kaolin, 5676-5679; Lepidolite, 5733; Lithium, 5941; Lithomarge, 5709; Magnesite, 5947: Mica, 6554-6559; Muscovite, 6880, 6890, 6893; Natrolite, 6896, 6898: Oligoclase, 6917; Olivine, 6926; Opal (common), 6976; Opal (wood), 7007, 7008; Orthoclase, 7038, 7045-7047; Ottrelite, 7059; Penninite, 7062-7064; Plagioclase, 7070; Pleonaste, 7585; Prase, 1398; Rock Crystal, 7185-7187; Ruby, 2359; Sanidine, 7053; Selenite, 4639; Serpentine, 7380-7388; Siliceous Sinter, 7023; Spinel, 7574-7575, 7580; Steatite, 7682-7684, 7686-7689: Staurolite, 7600; Talc, 7674-7675, 7677-7679; Topaz, 7786-7788, 7797-7803: Tourmaline, 7851-7855, 7860; Tremolite, 4874-4875; Tripolite, 7026, 7027; Viridite, 7919; Websterite, 7923; Zircon, 8221.

Mineral Statistics: *See under* Herberton, *in stat. tables*, Pls. 37, 38, 39, 40, 41, 42, 46, 46a.

Geological Publications: *See under* Chillagoe and Herberton, *also under* each Mining Centre.

Wardens and Inspectors of Mines: One of each stationed at Chillagoe and Herberton.

Walsh Co. Cook Dist. *See map*, Pl. 8.

Walsh River. Heads in the vicinity of Irvinebank and Watsonville; flows W.N.W. to join the Mitchell. Length, about 150 miles. Principal tributaries: Middle Walsh R., Third Walsh R. (Emu Cr.), Crooked Cr., Chillagoe Cr., Redcap Cr., Welcome Cr., Elizabeth Cr. *Min.Ref.* Azurite, *see* 189A, 189B; Cassiterite, 855, 879; Cuprite, 2428; Malachite, 6219; Scheelite, 7344; Stibnite, 7650; Tetrahedrite, 7760; Wolfram, 7946.

—— —— (North of), opposite junction of Rookwood Cr. *Min.Ref.* Limestone, *see* 641.

—— —— and Nondah Creek (between), Walsh and Tinaroo Mineral Fields. *Min.Ref. see under* Arbouin Copper Mines.

Walsh's Lease, Grasstree Goldfield. *Min.Ref.* Gold, *see* 4108.

Walter Hodgson Reef, Mulgrave Goldfield. *Min.Ref.* Gold, *see* 3778; Iron Pyrites, 5081.

Walton Extd. Lease (409), Gympie Goldfield. *Min.Ref.* Gold, *see* 4491.

—— Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4538.

Wanderer M.L. (622), Eclipse Group, Cloncurry. *Min.Ref.* Actinolite, *see* 4851; Malachite, 6091; Redruthite 7210; Tile Ore, 2495.

—— Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3504.

—— ——, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3839.

Wandering Digger Mine, Coolgarra. *Min.Ref.* Cassiterite, *see* 1056.

Wando Bore. *See under* Artesian Bores. No. 442.

—— Creek, 10 miles N.W. of Mungana. *Min.Ref.* Apatite, *see* 77; Gold (alluvial), 3204; Mica, 6554; Muscovite, 6888; Silver, 7449.

—— Station, S.S.W. of Rockhampton. *Lat.*, 24° 22′ S.; *Long.*, 150° E. *Min.Ref.* Molybdenite, *see* 6860; Wolfram, 8035.

Wangaratta Rail. Stn. and Bowen (between). *Min.Ref.* Malachite, *see* 6297.

Waniola Bore. *See under* Artesian Bores. No. 308.

Waratah Lease (570), Croydon Goldfield. *Min.Ref.* Galena, *see* 2709; Gold, 3497; Iron Pyrites, 4944; Silver, 7426; Silver (native), 7548.

—— ——, Yorkey's Goldfield. *Min.Ref.* Calcite, *see* 558; Gold, 4413; Magnesite, 5964.

—— M.L. (127), Tharsis Group, Cloncurry. *Min.Ref.* Malachite, *see* 6153; Tile Ore, 2527.

Warbreccan Bore. Incrustation inside of casing. *Analysis:* Calc. carbonate, 89·5; Mag. carbonate, 4·06; Ferrous carbonate, 5·06; Alkalies, etc. (by dif.), 1·39.

—— Co. Mitchell Dist. *See map*, Pl. 18.

Warburton Co. Gregory North Dist. *See map*, Pl. 20.

Ward Co. Moreton Dist. *See map*, Pl. 6.

Wardsdale Bore. *See under* Artesian Bores. No. 433.

Warde (H. S.), Inspector of Mines.

Report on Ravenswood Mines. Q.G.M.J., vol. 2, p. 488 (1901).

Report on Maytown Mines, Palmer Goldfield. Q.G.M.J., p. 490 (1903).

On Gold Find Near Oaks Station, Central District. Q.G.M.J., vol. 5, p. 187 1904.

On Etheridge and York Peninsula Fields. Q.G.M.J., vol. 8, p. 492 (1907).

Mining Developments in the Central Gold and Mineral Fields. In A.R.D.M., pp. 103-109 (1904).

Wardens:

CONTROLLING OFFICER: The Under Secretary, Mines Dept., Brisbane.

DUTIES: The administration of the Acts relative to Mining on Goldfields and Mineral Fields, and all matters incidental thereto.

The furnishing of Monthly and Annual Reports to the Mines Department on the operations carried on in the various mines, supplying returns of stone crushed, yields of gold, dividends, calls paid, etc.

HEADQUARTERS (with proclaimed and unproclaimed Fields and Mining Centres supervised)—

Bowen: *Controls* Marengo, Normanby, and Mt. Wyatt Goldfields; Sellheim Mineral (Silver) Field.

Brisbane: *Controls* Enoggera (gold).

Bundaberg: *Controls* Littabella Cr. (Coal), Boolboonda, Eidsvold, Gaeta, Perry, Reid's Creek, Tenningering (Mount Perry), and St. John's Creek Gold and Mineral Fields.

Burketown: *Controls* Burketown Mineral (Silver-lead) Field.

Cairns: *Controls* Mulgrave Goldfield.

Charleville: *Controls* Charleville Mineral (Opal) Fields (Duck, Eromanga, and Station Creeks, and Yowah Mines).

Charters Towers: *Controls* Balcooma, Cape River, Carrington, Charters Towers, Newhaven, Homestead, and Windsor Goldfields.

Chillagoe: *Controls* Chillagoe Gold and Mineral Field, which includes Muldiva, Mungana, Chillagoe, Kooboora, Fossilbrook, Bakerville, Wolfram Camp, Bamford, Mount Mulligan, Thornborough, and Tate Mining Centres.

Clermont: *Controls* Clermont Goldfield and Coalfield, including Springs Rush Goldfield; Anakie Mineral (Sapphire) Field.

Cloncurry: *Controls* Agate Downs and Bower Bird Goldfields; Cloncurry Gold and Mineral (Copper and Gold) Field.

Cooktown: *Controls* Cook and Cape York Peninsula Fields, including Alice R., Archer R., Coen, Hamilton, Palmer, Starcke, and West Normanby Goldfields; Annan R. and Mt. Windsor Tinfields; Little River Coalfield; Bowden Mineral (Tin) Field; Noble Island (Wolfram) Field; Hayes Creek, Lockinvar, Potallah Creek, and Rocky River Goldfields.

Croydon: *Controls* Croydon Goldfield; Stanhills Tinfield.

Cunnamulla: *Controls* Cunnamulla Mineral (Opal) Field (Koroit and Yowah Mines); Paroo Mineral (Opal) Field.

Eidsvold: *Controls* Eidsvold Gold and Mineral Field, including St. John's Creek (Gold and Antimony) and Rawbelle (Copper) Mines.

Georgetown: *Controls* Etheridge, Woolgar, Green Hills, and Oaks Goldfields.

Geraldton: *Controls* Jordan Cr. Goldfield.

Gladstone: *Controls* Barmundoo, Calliope, Cania-Kroombit, Langmorn, Maxwelton, Monal, Mt. Jacob, Mt. Rainbow, and Norton (Milton) Goldfields; Glassford Creek (Copper), Many Peaks (Copper), Mt. Cannindah (Copper), Mt. Hector (Copper), and Rosedale (Wolfram) Mineral Fields; Bompa (Mount Jacob), Mount Larcombe, Eastern Boyne, Figtree, and Uncle Sam Goldfields.

Gympie: *Controls* Gympie, Glastonbury, Kilkivan, Marodian, and Yabba Gold and Mineral Fields; Gunalda (Coal).

Herberton: *Controls* Herberton Gold and Mineral Field, including Russell, Russell Extd. (Towalla), Mareeba, and Mulgrave Goldfields; Montalbion; Mt. Molloy, O.K. (Copper Fields); Mt. Garnet (Copper-Tin Fields); Herberton, Irvinebank, Newellton or Silver Valley, Smith Creek, Stannary Hills, Watsonville, Mt. Spurgeon (Tinfields); Coolgarra (Tin and Wolfram Fields); Jumna Cr., Garrumba.

Hughenden: *Controls* Hughenden Mineral Field.

Innisfail (Geraldton): *Controls* Jordan Goldfield.

Ingham: *Controls* Kangaroo Hills Mineral Field.

Wardens—*continued:*

Ipswich: *Controls* Ipswich Coalfield.

Longreach: *Controls* Opalton Mineral Field.

Mackay: *Controls* Eungella, Grasstree and Nebo Goldfields; Blackrock Cr. (Coal), Cattle Cr. (Copper), Mt. Flora (Copper), and Mt. Spencer (Silver, Copper) Mineral Fields, Alligator Creek (Gold).

Maryborough: *Controls* Stanton-Harcourt (Gold); Biggenden (Bismuth), Mt. Bopple (Graphite), Mt. Shamrock (Gold-Bismuth), Mt. Stedman (Gold), and Paradise (Gold) Mineral Fields; Chowey (Gold).

Mt. Morgan: *Controls* Mt. Morgan (Crocodile) Goldfield (Dee River, Moonmera, Mt. Morgan, Mt. Usher, Mt. Victoria).

Nanango: *Controls* Nanango Goldfield.

Ravenswood: *Controls* Piccadilly, Ravenswood, and Strathalbyn Goldfields; also Far Fanning, Golden Valley, and Mt. Success, Star River (Argentine) Mineral Field.

Rockhampton: *Controls* Canoona, Cawarral, Morinish, Oaks View, Ridgelands, Rosewood, Stanwell, and Ulam Goldfields; also Mt. Chalmers (Copper and Gold), and Mt. Warminster (Copper) in the Cawarral Goldfield.

Roma: *Controls* Roma Mineral Field.

St. Lawrence: *Controls* Yatton Goldfield.

Stanthorpe: *Controls* Macdonald and Pikedale Goldfields; Stanthorpe (Tin) Mineral Field; Texas (Silver, Lead) Mines, Ballandean (Silver, Lead, Copper, Tin) Mines.

Thargomindah: *Controls* Paroo (Opal) Mineral Field (Duck Creek, etc.).

Thursday Island: *Controls* Horn Is. and Possession Is. Goldfields.

Toowoomba: *Controls* Coal Mines at King's Creek, etc.

Townsville: *Controls* Star River Mineral Field (Wolfram).

Warwick: *Controls* Canal Cr., Leyburn, Lucky Valley, Palgrave, Talgai, and Thane's Cr. Goldfields.

Ware (Teste) Island, Brit. New Guinea. *Min.Ref.* Limestone, *see* 715.

Wareena Cr. Bore. *See under* Artesian Bores. No. 253.

Warenda Lease Bores. *See under* Artesian Bores. No. 432.

Warianna Sub-artesian Bore. *See under* Artesian Bores. No. 2

Warirata Road, Brit. New Guinea. *Min.Ref.* Cuprite, *see* 2487; Redruthite, 7311.

Warner Co. Cook Dist. *See map*, Pl. 8.

Waroo Tin Mine, 38 miles W. of Stanthorpe. *Min.Ref.* Cassiterite, *see* 1034; Mispickel, 6731.

Warooby Bore. 7¾ miles N.E. of Roma. *Min.Ref.* *see under* Oil.

Warra Bore. *See under* Artesian Bores. No. 432.

Warralto Cr., nr. Stanthorpe. *Min.Ref.* Cassiterite, *see* 1035.

Warreah, Gt. Northern Rail. (Blantyre Coal Shaft). *Min.Ref.* Coal, *see* 1709c. *See also under* Coal Bores.

Warreah Bores. *See under* Artesian Bores. Nos. 63, 311.

Warrego District—

SITUATION: *See maps*, Pls. 18, 19. *Lat.*, 25°–29°; *Long.*, 142°–148°. Bounded on the north by the Districts of Mitchell and Leichhardt; on the east by the District of Maranoa; on the south by the State of New South Wales; and on the west by the District of Gregory South.

AREA: 58,334 sq. miles.

PRINCIPAL RIVERS: Bulloo (*tribs.* several creeks), Paroo, Warrego (*tribs.* Langlo, Ward, Nive Rs., and Angellala Cr.).

PRINCIPAL MINING CENTRES: Mineral Fields—Paroo (including Duck Cr., Sheep Station Cr., Emu Cr., and Lushington Opal Workings); Cunnamulla (including Yowah and Koroit Opal Fields); *which see.*

Warrego District—*continued:*

Counties:

Bando Co., Cunnamulla Mineral Field (in part—*see also* Humeburn Co., Palmer Co., Wellington Co.).

Bulloo Co., Paroo Mineral Field (in part—*see also* Humeburn Co., Norley Co., Wellington Co.; Toompine).

Burenda Co., Burrandilla Co., Chesterton Co., Glanworth Co., Gowan Co.

Humeburn Co., Cunnamulla Mineral Field (in part—*see also* Bando Co.); Koroit Field, Paroo Mineral Field (in part—*see also* Bulloo Co.); Duck Cr. Field, Emu Cr. Mines, Goodman's Flat Mines, Lushington Mines, One-mile Workings, Pride of the Hills Mine, Sheep Station Cr. Mines (all Opal).

Kungie Co.; Kyrunda Co.; Langlo Co.; McKinlay, Adavale.

Munga Co.; Nickavilla Co.; Nive Co.; Noorama Co.

Norley Co., Paroo Mineral Field (in part—*see also* Bulloo Co.).

Numalla Co.

Orrery Co., Augathella, Charleville, Morven.

Palmer Co., Cunnamulla Mineral Field (in part—*see also* Bando Co.).

Paroo Co.; Pitteroo Co.; Ross Co.; Titheroo Co.

Wellington Co., Cunnamulla Mineral Field (in part—*see also* Bando Co.); Southern Cross Field, Yowah Field, Fiery Cross Field, Paroo Mineral Field (in part—*see also* Bulloo Co.), Thargomindah (all Opal).

Wyara Co.

Mineral References and Statistics: *See under* names of Principal Mining Centres.

Warren Coal Bore. Half-mile south of Warren Rail. Stn. (Central Rail. line). Mostly shales and sandstones, with one bed of basalt 50 feet thick met with at 120 feet, and another 74 feet thick, met with at 491 feet. No coal. Total depth, 565 feet. *Ref.* B.D. (1912).

Warren and Mt. Lion (between), 16 miles W. of Rockhampton. *Min.Ref.* Oolitic Limestone, *see* 745. *Also under* Supplementary Report List, No. 94, for further reference.

Warren Hastings Shaft, Gympie Goldfield. *Min.Ref.* Platinum, *see* 7074a.

Warrice Railway Siding Sub-artesian Bore. *See under* Artesian Bores. No 272.

Warrong Co. Maranoa Dist. *See map,* Pl. 12.

Warwick, 169 miles (by rail) S.W. of Brisbane. *Lat.,* 28° 12′ S.; *Long.,* 152° 3′ E.

Population: 5,536 (Census 1911).

Railway Base for the Canal Cr., Leyburn, Lucky Valley, Palgrave, Talgai, and Thane's Cr. Goldfields.

Leases: (Mining Centres). Miners' Homestead Leases in force, 148; area, 4,424 acres.

Mineral References: Clay, *see* 1572; Limestone, 648; Manganese-dioxide, 6427; Rhodochrosite, 7314; Rhodonite, 7319; Tripolite, 7029.

Geological Note: Rocks belonging to the Walloon Series (Trias-Jura) occur throughout the neighbourhood, probably resting on Gympie beds (Permo-Carboniferous), whose outcrops are seen some miles to the south-west. Basalt covers the Ipswich Formation in places.

Geological Publications (bearing on the District): (1) Eleventh Tri-monthly Report of the Geological Surveyor, by S. Stutchbury, Sydney (By Auth., 1853); (2) Report on the Auriferous Country of the Upper Condamine, by D. O'H. Aplin, Govt. Geologist, Southern Queensland (By Auth. Brisb. 1869.—Parl. Paper); (3) Queensland, Australia, by R. Daintree (By Auth. Lond. 1871); (4) Report on the West Moreton and Darling Downs District (By Auth. Brisb. 1876—Parl. Paper). (*All out of print.*) (5) *See also* G.S.Q. Pub. Nos. 41 (1887), 87 (1892), 186 (1903), 189 (1904).

Rainfall: Yearly average between 1902 and 1907, 29·12 inches. Wet Days, 83.

Chamber of Commerce: Secretary, J. Porter.

Technical College: For mining subjects taught, *see under* "Technical Colleges."

Warwick Bores. *See under* Artesian Bores. No. 434.

—— Castle Group, Cloncurry. *Includes* Warwick Castle, Evelyn, and Louisa M. Leases. *Min.Ref.* Malachite, *see* 6189; Tile Ore, 2543.

—— —— M.L. (314), Cloncurry. *Min.Ref.* Malachite, *see* 6189; Tile Ore, 2543.

—— Springs. *See* Water Analyses. No. 868B.

Washington 1 and 2 Mines, Star R. (Argentine) Silver Field. *Min.Ref.* Anglesite, *see* 58; Cerussite, 1285; Galena, 3001; Ironstone, 5582; Massicot, 6543; Minium, 6631.

Washpool Bores. *See under* Artesian Bores. Nos. 141, 403.

Water Analyses (Artesian, etc.). *See under* Artesian Bores for list. To obtain analyses of water from bores or wells, first write for directions and list of charges to Government Hydraulic Engineer, Water Supply Department, Brisbane. By arrangement, analyses will be made if application is made direct with Government Analyst.

Waterford Bore. *See* Tygum Bore, *under* Coal Bores.

Waterfall Creek, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 827.

—— (Homeward Bound) Reef, Croydon Goldfield. *Min.Ref.* Gold, *see* 3528; Zinc Blende, 8059.

Waterpark Creek, Port Clinton. *Min.Ref.* Coal, *see* 1802.

Geological Note: Rocks consist of sandstone, shales, and several seams of brown coal belonging to the Walloon Series (Trias-Jura), some of the seams being 30 feet thick. To the north and south there are rocks belonging to the Devonian System, with granite to the west, and sand dunes to the east. *See* G.S.Q. Pub. No. 174 for details.

Water's Selection (120), 1½ mile N. of Beaudesert. *Min.Ref.* Coal, *see* 1781.

Waterstown Colliery, North Ipswich Coal Area. *Min.Ref.* Coal, *see* 1755, 1756.

Waterworks Road, Enoggera. *Min.Ref.* Hornblende, *see* 4842.

Watson's Mine, Lawn Hills. *Min.Ref.* Calcite, *see* 451; Lead Gossan, 5728; Zinc Blende, 8053.

Watsonville—

Situation: *See maps*, Pls. 8, 9, 22. Head of James Cr., br. of Walsh R., 7 miles S.E.byE. of Stannary Hills Rail. Stn., 6 miles W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Lat.*, 17° 22′ S.; *Long.*, 145° 20 E.

Population: 277 (estimated, 1910). No returns later than this, now included Herberton Gold and Mineral Field.

Mineral Statistics: Tin. *See under* Herberton, *in stat. tables*, Pls. 38, 46, 46A.

Mineral References: Lead (Galena), *see* 2783, 2784; Copper (Azurite) 190-193, (Chalcanthite) 1321-1326, (Copper carbonate) 1889-1891, (Copper, native) 1991, (Copper Ore) 2026, 2027, (Copper Oxide) 2047, (Copper Pyrites) 2156-2165, (Cuprite) 2429, 2430, (Malachite) 6220-6225, (Tenorite) 7720, (Tile Ore) 2546-2548; Tin (Cassiterite) 880-921, (Stannite) 7596, 7597; Bismuth (native), 334; Wolfram, 7948-7955; Scheelite, 7345; Antimony (Cervantite) 1306, (Stibnite) 7629, 7630; Chalcolite, 1406; Arsenolite, 104; Iron (Copperas), 2335, (Iron Pyrites) 5062-5068, (Ironstone) 5523-5526, (Limonite) 5841, 5841A, (Marcasite) 6504, 6505, (Mispickel) 6690-6697, (Ochre, red) 4811-4813, (Pyrrhotite) 7156, (Siderite) 7406, (Vivianite) 7921; Graphite, 4593. Other Minerals.—Chlorite, 1435-1441; Felspar, 2633-2638; Fluorspar, 2661, 2662; Garnet, 3100-3104; Kaolin, 5677, 5678; Mica, 6557; Muscovite, 6890; Orthoclase, 7040; Rock Crystal, 7186, 7187; Sanidine, 7053; Serpentine, 7380-7383; Steatite, 7682-7684; Talc, 7674; Tourmaline, 7853.

Geological Note: The country rocks are sandstones, greywackes, and shales belonging to the Gympie Formation (Permo-Carboniferous), in contact with granite, porphyry, and diorite. The granite occurs in a massive form, the porphyry and diorite as dykes. Tin ore occurs as impregnations close to faults in the greywackes. *See* G.S.Q. Pub. Nos. 119 and 192 for details and maps.

Geological Publications: Reports—Nos. 13 (1883), 119 (1897), 192 (1904). Map No. 220 (1909). *See under* Geol. Surv. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Herberton.

Watten Bore. *See under* Artesian Bores. No. 193.

Wattle and Cattle Creeks (granite ridges between), Norton Goldfield. *Min.Ref.* Gold, *see* 4295; Iron Pyrites, 5390; Mispickel, 6800.

Watt's Selection (55), 3 miles S.E. of Logan Village Rail. Stn. (South Coast line). *Min.Ref.* Coal, *see* 1787; Cacoxenite, 439; Limonite, 5903.

Waverley Bore. *See under* Artesian Bores. No. 413.

—— Co. Gregory North Dist. *See map*, Pl. 20.

—— Tin Leases, Kangaroo Hills Mineral Field. *Min.Ref.* Azurite, *see* 223; Cassiterite, 1162; Malachite, 6310.

Weary Bay, 31 miles S. of Cooktown. The Port for the produce of the Bloomfield River Alluvial Tin Workings.

Weatherly Creek and Reef, Soldier's Cap, Cloncurry. *Min.Ref.* Gold, *see* 3472-3474; Limonite, 5788.

Webb's Reef, Pikedale Goldfield. *Min.Ref.* Gold, *see* 3839.

Websterite. *Syn.* Aluminite. *Compo.*, Hyd. sulphate of alumina. *Colour*, dull whitish. Earthy. *H.* = 1-2. *Sp.gr.* = 1.6. *Contents* (*max.*), Alumina 29 per cent.

7923. ——. *Assoc.with* Cassiterite, Azurite, Malachite, Iron Pyrites, Hematite, Limonite, Göthite, Mispickel, Wolfram, Fluorspar, Chlorite, and Penninite, in quartz lode. *Loc.* Coolgarra Tin Mines, 12 miles (by road) N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

7924. ——. Mt. Morgan Mine, 24 miles (by rail) S.S.W. of Rockhampton. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.M.

Wedge Island, Keppel Bay. *Min.Ref.* Turquoise, *see* 7912.

Wee MacGregor (Macgregor) Group, Corella R., Cloncurry. *See* Pl. 23. *Includes* Wallaroo, Wattle, Wee MacGregor, and Great Central M. Leases. *Min.Ref.* Azurite, *see* 170A; Limonite, 5798; Malachite, 6158; Redruthite, 7253; Tile Ore, 2529.

Wedgewood's Bore. *See under* Artesian Bores. No. 234.

Weelamurra Run Bores. *See under* Artesian Bores. No. 435.

Weengallon Bore. *See under* Artesian Bores. No. 107.

Weedondilla Bore. *See under* Artesian Bores. No. 358.

Weinberg (E.A.), M.I.M. and M. Report on Mt. Molloy Copper Mine, Q.G.M.J., vol. 6, p. 270 (1905).

Weinhalt's Sub-artesian Bore. *See under* Artesian Bores. No. 140.

Weipa Co. Cook Dist. *See map*, Pl. 8.

Weka M.C., Eva Group, Cloncurry. *Min.Ref.* Atacamite, *see* 126; Chrysocolla, 1500; Dioptase, 2581; Malachite, 6121; Tourmaline, 7814.

Wellcamp Sub-artesian Bores. *See under* Artesian Bores. No. 436. *Min.Ref.* Coal, *see* 1624A.

Welcome Creek, 45 miles W. of Cooktown (3 miles S. of 41-mile railway peg), *Min.Ref.* Coal, *see* 1610, etc.

—— Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1127.

—— ——, Horn Is. Goldfield. *Min.Ref.* Gold, *see* 3820.

—— ——, Morinish Goldfield. *Min.Ref.* Galena, *see* 3062; Gold, 4336; Iron Pyrites, 5407A.

—— ——, Champion Gully, Mt. Morgan (Crocodile) Goldfield. *Min.Ref.* Copper Pyrites, 2317; Gold, 4383; Iron Pyrites, 5419.

—— Reef, Copperfield, Clermont Goldfield. *Min.Ref.* Gold, *see* 4157.

—— ——, Croydon Goldfield. *Min.Ref.* Gold, *see* 3560.

—— ——, Normanby Goldfield. *Min.Ref.* Copper carbonate, *see* 1945; Copper Pyrites, 2264; Gold, 4137; Iron Pyrites, 5312; Mispickel, 6766.

—— ——, Norton Goldfield. *Min.Ref.* Gold, *see* 4293.

—— Stranger Lease, Talgai Goldfield. *Min.Ref.* Gold, *see* 3861; Limonite, 5859.

—— Valley, Cooktown Railway. *Min.Ref.* Coal, *see* 1609.

—— and Rookwood Creeks, brs. of Walsh R., N.W. of Mungana. *Min.Ref.* Limestone, *see* 642.

Welford Lagoon, 120 miles W.S.W. of Blackall. *Min.Ref.* Coal, *see* 1707A.

Weli and Hill's Claim, "The Springs," Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3353; Limonite, 5891.

Wellesley Co. Burke Dist. *See map,* Pl. 20.

Wellesley Islands, from 48 to 76 miles N. of Burketown. *Co.* Wellesley; *Dist.* Burke.

Geological Note: The rocks on the islands, judging from what has been observed on some of them, are made up of clays, sandstones, and ferruginous cements and grits belonging to the "Desert Sandstone" Formation (Upper Cretaceous). *See* G.S.Q. Pub. No. 180 for details.

—— Tin Mine (Selection (Selection 347), Lode Cr., Stanthorpe. *Min.Ref.* Cassiterite, *see* 989.

Wellington Co. Warrego Dist. *See map,* Pl. 18.

—— Point, 19 miles E. of Brisbane (60 chains S. of). *Min.Ref.* Gold, *see* 4208; Kaolin, 5698A.

Wellshot Run Bores. *See under* Artesian Bores. Nos. 54, 437.

Welsby's Lode (Block 588), Mountain Station Gully, Stanthorpe. *Min.Ref.* Cassiterite, *see* 995; Wolfram, 7991.

Wentworth Co. Burke Dist. *See map,* Pl. 20.

Wernerite. *Syn.* Scapolite, *which see.*

Weramo Co. Gregory South Dist. *See map,* Pl. 18.

Werie Ela Run Bore. *See under* Artesian Bores. No. 438.

Weringa Co. Gregory South Dist. *See map,* Pl. 18.

West Bore. *See under* Artesian Bores. No. 354.

—— Calgoa Lode (Sel. 1393), 15 miles N.byW. of Kilkivan. *Min.Ref.* Azurite, *see* 262; Copper Pyrites, 2322; Galena, 3073; Malachite, 6377; Mispickel, 6811.

—— Coast, Cape York Peninsula. *Min.Ref.* Ironstone, *see* 5527, 5535, 5536.

—— Moreton Bores. *See* Ipswich Coalfield, *under* Coal Bores.

—— —— Collieries (Old and New), Bundamba Coal Area, Ipswich. *Min.Ref.* Coal, *see* 1742A, 1743A. *See also under* Govt. Ming. Jour., Special Reports, Nos. 44, 93.

West Moreton or Ipswich Coalfield, 24 miles (by rail) W.S.W. of Brisbane. (*See also* Ipswich Coalfield). *Min.Ref.* Coal, *see* 1729-1759. *See also under* Govt. Ming. Jour., Special Reports, Nos. 44, 93.

—— of Scotland Bore. *See* Gympie Goldfield, *under* Gold Bores.

—— Quarter Sub-artesian Bores. *See under* Artesian Bores. No. 361.

West's Yahmahnto Coal Mine, 5 miles E. of Ipswich. *Min.Ref.* Coal, *see* 1728, 1728A, 1728B.

Western Creek, Etheridge Goldfield. *Min.Ref.* Gold (alluvial), *see* 3212, (reef) 3743; Scheelite, 7342.

—— Copper and Silver Mine, Kangaroo Hills Mineral Field. *Min.Ref.* Bornite, *see* 429.

—— Peak Downs Copper Lodes, 7 miles W. of Copperfield, Clermont Goldfield. *Min.Ref.* Azurite, *see* 235.

—— Reef, in Wilmot Extd. Lease (807), Phœnix 1 South Lease (825), and Phœnix Golden Pile and New Zealand Lease (815), Gympie Goldfield. *Min.Ref.* Galena, *see* 3086; Gold, 4539; Iron Pyrites, 5464.

—— and Eastern Reefs (in the Phœnix 5 N. L. (648)), Gympie Goldfield. *Min.Ref.* Gold, *see* 4540.

Westbourne Bore. *See under* Artesian Bores. Nos. 154, 155.

Westbrook Bore. *See under* Artesian Bores. No. 55.

—— Creek Bore. *See under* Artesian Bores. No. 436.

Westbury Bore. *See under* Artesian Bores. No. 198.

Westgrove Co. Leichhardt Dist. *See map,* Pl. 10.

Westhill Bore. *See under* Artesian Bores. No. 266.

Westland Bores. *See under* Artesian Bores. Nos. 56, 439.

Westralia Reef, "The Springs," Coen Goldfield. *Min.Ref.* Gold, *see* 3801.

Westwood, S.W. of Rockhampton. *Lat.*, 23° 37′ S.; *Long.*, 150° 9′ E. *Min. Ref.* Malachite, *see* 6371; Steatite, 7696. *Geological Note.*—The rocks in and about the town consist of slates and quartzites, with intrusive diorites and andesites.

—— (about 3 miles N. of), S.W. of Rockhampton. *Min.Ref.* Calcite, *see* 546; Garnet, 3164; Tourmaline, 7871.

—— Reef, S.E. of Westwood. *Min.Ref.* Gold, *see* 4355; Ironstone, 5624.

Wet Cr., br. of California Cr. (trib. of Sandy Tate R.). *Min.Ref.* Galena, *see* 2788; Gold, 3766; Hornblende, 4829; Iron Pyrites, 5072, 5073.

Wetherley Sel. Sub-artesian Bore. *See under* Artesian Bores. No. 203.

Wetheron, W. of Maryborough. *Min.Ref.* Jasper, *see* 5637.

Wexford Reef, Georgetown, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2756; Gold, 3732A; Iron Pyrites, 5051; Tenorite, 7719.

Wey Reef, Hillsborough (8 mile), Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2222A; Gold, 4013; Iron Pyrites, 5237.

Weymouth Bay, N.W. of Cooktown. *Min.Ref.* Cassiterite, *see* 972; Coal, 1618; Ironstone, 5537; Wolfram, 7982.

—— Co. Cook Dist. *See map*, Pl. 8.

Whatton Sub-artesian Bore. *See under* Artesian Bores. No. 227.

Wheal Davey Tin Lease (58), Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 778; Tourmaline, 7845.

—— Vohr Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1128; Copper Pyrites, 2212; Penninite, 7064; Talc, 7678.

Wheatleigh Artesian Bore. *See* Kenmore Bore. No. 357.

Wheel of Fortune Reef, Upper Cape, Cape R. Goldfield. *Min.Ref.* Gold, *see* 4061; Iron Pyrites, 5269; Ironstone, 5554.

—— —— (or You-never-can-tell) Reef, Hodgkinson Goldfield. *Min.Ref* Gold, *see* 3761.

Wheeler's Claim, Stanhills Tinfields. *Min.Ref.* Cassiterite, *see* 763.

Whistling Tom Reef, Old Homestead Diggings. *Min.Ref.* Gold, *see* 4069.

Whitalby Bore. *See under* Artesian Bores. No. 341.

White Arsenic. *See* Arsenolite.

—— Gates, Apsley Cr., Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3296.

—— Ground, Black Ridge, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3317.

—— Hill, "The Springs," Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3354.

—— —— Lead, Capeville, Cape R. Goldfield. *Min.Ref.* Gold (alluvial), *see* 3266.

White Mica. *See* Muscovite.

White Oxide Group, Cloncurry. *Includes* White Oxide M.C., Speculation, Rob Roy, and Newcastle M. Leases. *Min.Ref.* Malachite, *see* 6159; Tile Ore, 2529A.

—— —— M.C. (282), Cloncurry. *Min.Ref.* Malachite, *see* 6159; Tile Ore, 2529A.

—— Rocks Copper Lease, Marodian Goldfield. *Min.Ref.* Azurite, *see* 255; Cuprite, 2485; Hematite, 4804A; Malachite, 6383; Tetrahedrite, 7781.

—— Rose M.L. (330), Cloncurry. *Min.Ref.* Limonite, *see* 5787; Malachite, 6148; Tile Ore, 2524.

White Sapphire. *See* Corundum. *See also* Topaz, the colourless variety of which is sometimes wrongly termed "white sapphire" by miners and jewellers.

—— Star Mine, Dry R., trib. of Wild R., S.S.W. of Herberton. *Min.Ref.* Cerussite, *see* 1223; Galena, 2861; Massicot, 6537.

—— —— Lease (160), Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1258; Copper carbonate, 1939; Ironstone, 5567; Manganese-dioxide, 6444; Minium, 6601.

—— Wings P.A., Mt. Brown, Kangaroo Hills Mineral Field. *Min.Ref.* Cerussite, *see* 1248; Copper carbonate, 1932; Chrysocolla, 1529; Galena, 2980; Hematite, 4749; Minium, 6602; Zinc Blende, 8159.

—— and Phillip's Mine, Ravenswood Goldfield. *Min.Ref.* Stibnite, *see* 7644.

White's Bore. *See under* Artesian Bores. No. 318.

—— Gully, Gympie Goldfield. *Min.Ref.* Gold (alluvial), *see* 3418.

—— or Manaramby Cr., Scrub Paddock Diggings. *Min.Ref.* Gold (alluvial), *see* 3196.

—— Reef, Mt. Ophir. *Min.Ref.* Gold, *see* 3572; Iron Pyrites, 4973; Ironstone, 5512; Molybdenite, 6815.

Whitehill (White's) Sub-artesian Bores. *See under* Artesian Bores. No. 318.

Whitewood Bores. *See under* Artesian Bores. Nos. 167, 324, 410.

Whitney Bore. *See under* Artesian Bores. No. 211.

Whitsunday Passage and Islands, about 32 miles E.byS. of Bowen. *Co.* Herbert; *Dist.* Kennedy North.

GEOLOGICAL NOTE: The rocks on the mainland are massive granite, with porphyry, felsite, diorite, and andesite dykes. The islands have not been geologically examined.

Whitwood Colliery, Bundamba Coal Area. *Min.Ref.* Coal, *see* 1757. *See also* Dinmore *under* Coal Bores.

Whitestone (Par. of) (Por. 126v). *Min.Ref.* Hyalite, *see* 7018.

Whitley's Shaft, Burrum Colliery, Burrum Coalfield. *Min.Ref.* Coal, *see* 1805.

Whitula Bores. *See under* Artesian Bores. No. 440.

Who'd-ha'-thought-it Reef, Norton Goldfield. *Min.Ref.* Calcite, *see* 534; Galena, 3052; Gold, 4294; Iron Pyrites, 5389; Mispickel, 6799; Silver, 7527; Zinc Blende, 8200.

Whyenbah Bore. *See under* Artesian Bores. No. 446.

Wick Bore. *See under* Artesian Bores. No. 193.

Wickham (Par. of) (Por. 11), 3½ miles S.E. of Logan Village. *Min.Ref.* Coal, *see* 1790.

Wicklow Co. Burnett Dist. *See map,* Pl. 4.

Wide Bay Cr. Heads at Main Coast Range, 16 miles S. of Kilkivan, and flows N.E. into Mary R. 15 miles N.W. of Gympie. Length, about 40 miles. *Min.Ref.* Gold, *see* 4419.

—— —— —— and Kilkivan (between the head of), S. of Kilkivan. *Min.Ref.* Cinnabar, *see* 1563.

Wide Bay District. *Includes* Fraser or Great Sandy Is.

SITUATION: *See maps,* Pls. 4 and 5. *Lat.*, 24°—27°; *Long.*, 151°—154°. It is bounded on the north partly by the Port Curtis District and Hervey Bay; on the east by the Pacific Ocean; on the south by the Moreton District; on the west by the Burnett District.

The principal rivers in the district are Kolan, Burnett (trib. Perry), Elliott, Burrum (tribs. Gregory, Isis, and Cherwell), Mary (tribs. Susan and Yabba Rs., Tinana and Munna Crs.), and Noosa.

AREA (in sq. miles): 8,125. With islands included, 8,791.

PRINCIPAL MINING CENTRES: Gold and Mineral Fields—Marodian, Kilkivan, Glastonbury, Mt. Bopple, Neerdie, Gympie, Yabba (Jimna), and Black Snake (including Mt. Cobalt, Mt. Coora, and Mt. Clara Cobalt Lodes), *which see.*

COUNTIES:

Bowen Co.

Cook Co., Bodalla; Booyar; Bundaberg. Burrum Coalfield, Howard, Childers; Cordalba. Fairymead; Huxley; New Caledonia Cable Station; Springfield; Wallace.

Fraser Co.

Lennox Co., Calgoa Copper Mines, Thunder Cr.; Gigoomgan; Glastonbury Goldfield, Gympie Goldfield (in part—*see also* March Co.). Kilkivan Gold and Mineral Field, Black Snake, Mt. Clara (Cobalt), Mt. Cobalt (Cobalt), Mt. Coora (Cobalt); Marodian Goldfield, Colo Mines (Gold), Mt. Colo (Manganese), Muldoo Mines (Copper), Yorkey's Goldfield; Munna Mines (Copper), Teebar Mines (Copper); Yabba (Jimna) Goldfield.

March Co., Gundiah; Gympie Goldfield (principal part—*see also* Lennox Co.); Kenilworth; Maryborough; Mt. Bopple (Graphite); Neerdie Mines (Stibnite); Noosa; Tewantin; Tiaro; Tinana; Traveston.

Yarrol Co. (partly—*see also under* Burnett Dist.).

MINERAL REFERENCES AND STATISTICS: *See under* names of Principal Mining Centres.

Widgee Cr., S.E. of Beaudesert. *Min.Ref.* Coal, *see* 1782c.

—— ——. Rises 15 miles W.S.W. of Gympie, and flows N.E. into Mary R. 8 miles N.W. of Gympie. Length, 20 miles. *Min.Ref.* Chrysotile, *see* 7399.

Widgegoara Sub-artesian Bores. *See under* Artesian Bores. No. 441.

Widow M.C., Dobbyn Group, Cloncurry. *Min.Ref.* Cuprite, *see* 2411A; Malachite, 6173.

Wigton Head Station, Woroon. *Min.Ref.* Lead Ore, *see* 5723A; Silver, 7440.

Wilangi Station, Styx R., 9 miles S.S.E. of St. Lawrence. *Lat.*, 22° 30′S.; *Long.*, 149° 35′ E. *Min.Ref.* Kaolin, *see* 5703.

Wild Boar Coal Seam, A.C. Creek, Cooktown Coalfield. *Min.Ref.* Coal, *see* 1610A.

—— Bore. *See under* Artesian Bores. No. 438.

Wild Cat Lead, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3326, 3327; Psilomelane, 7092.

—— Duck Bore. *See under* Artesian Bores. Nos. 262, 420.

—— Horse Plains. *See under* Artesian Bores. No. 397.

—— —— Reef, Cania Goldfield. *Min.Ref.* Gold, *see* 4358; Mispickel, 6802.

—— —— ——, Scrub Paddock Diggings. *Min.Ref.* Copper, *see* 1841B; Copper Pyrites, 2140; Gold, 3626; Iron Pyrites, 5012.

—— Irish Girl Mine, Ravenswood Goldfield. *Min.Ref.* Copper Pyrites, *see* 2226; Gold, 4032; Zinc Blende, 8144.

—— —— —— Reef, Cradle Cr., Palmer Goldfield. *Min.Ref.* Gold, *see* 3682.

—— Irishman Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1129; Wolfram, 8027.

Wild (Upper Herbert) River. Heads nr. Herberton, flows southerly to join the Herbert River. *Min.Ref.* Augite, *see* 140; Carnelian, 1387; Cassiterite, 1130.

—— River Tin Mines, nr. Herberton. *Min.Ref.* Cassiterite, *see* 1130; Fluorspar, 2681; Wolfram, 8028.

—— and Dry Rivers (junction of), S.S.W. of Herberton. *Min.Ref.* Stibnite, *see* 7640.

Wild Scotchman Reef, New Homestead Diggings. *Min.Ref.* Gold, *see* 4068.

—— —— ——, Normanby Goldfield. *Min.Ref.* Gold, *see* 4138.

Wilkie Gray Co. Kennedy North Dist. *See map*, Pl. 16.

Willemite. *Compo.*, Silicate of zinc. *Colour* and *Streak*, white. *H.* = 5·5. *Sp.gr.* = 3·89-4·18. *Contents* (*max.*), Zinc 58 per cent.

7925. ——. *Loc.* Montalbion, 7 miles S.W. of Stannary Hills, Chillagoe Rail. line, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* **Cook.** *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

William Tell Mine (Leishman's), Paradise Goldfield. *Min.Ref.* Gold, *see* 3614; Iron Pyrites, 5003.

Williams Bore. *See under* Artesian Bores. No. 269.

William's Cr. Sub-artesian Bore. *See under* Artesian Bores. No. 171.

—— Hill, Por. (91), Kholo. *Min.Ref.* Jasper, *see* 5646; Manganese-dioxide, 6454.

Williams Mine, about 16 chains S.W. of Cleveland. *Min.Ref.* Gold, *see* 4211.

—— ——, Queensland-N.S.W. Border. *Min.Ref.* Cassiterite, *see* 1036.

—— River (head), 35 miles S.E. of Cloncurry. *Min.Ref.* Garnet (Almandine), *see* 3152, (Pyrope) 3165.

—— —— Bore. *See under* Artesian Bores. No. 242.

Williams's Selection, Mt. Crosby, nr. Brisbane. *Min.Ref.* Pyrolusite, *see* 7128.

—— Selections (14 and 15), 2 miles N.W. of Wolston Rail. Stn. *Min.Ref.* Coal, *see* 1766.

Williams and Brannigan's Stations (between), Endeavour R., Cooktown. *Min. Ref.* Lievrite, *see* 5735.

Willoughby Bore. *See under* Artesian Bores. No. 142.

Wills Co. Gregory North Dist. *See map*, Pl. 20.

Wills River. Heads in the country 70 miles W.S.W. of Cloncurry, and flows S.S.E. to join the Burke R., 180 miles W. of Winton. *Mines*—Lady Fanny and Mt. Hope Group of Copper Mines. *Min.Ref.* Covelline, *see* 2375, 2376; Chrysocolla, 1523; Copper (native) 1996; Copper Pyrites, 2204-2207; Iron Pyrites, 5131-5132; Limonite, 5862, 5865-5868; Malachite, 6259-6261, 6265-6269; Redruthite, 7286-7291; Tile Ore, 2553-2557.

Will's Shaft, Kangaroo Hills Mineral Field. *Min.Ref.* Galena, *see* 2976; Tremolite, 4876.

Wilmot Extd. Lease (807), Gympie Goldfield. *Min.Ref.* Gold, *see* 4492, 4539; Iron Pyrites, 5467.

Wilmot Reef, Gympie Goldfield. *Min.Ref.* Gold, *see* 4541.

Wilson (Robert).

Geological Survey Publication—Queensland Coal: Its Economic Value as a Steam Coal. Appendix to Rep. No. 147 (1899).

—— Co. Gregory South Dist. *See map*, Pl. 18.

—— Mine, Coen Goldfield. *Min.Ref.* Gold, *see* 3699; Mispickel, 6677.

—— and Muir's Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 777.

Wilson's Bore. *See under* Artesian Bores. No. 267.

Wilton Bore. *See under* Artesian Bores. No. 142.

Wimmera Bore. *See under* Artesian Bores. No. 335.

Windah, about 32 miles S.W.byW. of Rockhampton. *Min.Ref.* Copper, *see* 1859.

Windeyer Bore. *See under* Artesian Bores. No. 348.

—— Co. Mitchell Dist. *See map*, Pl. 18.

Windmill Bores. *See under* Artesian Bores. Nos. 325, 432.

Winding Engine Drivers' Certificates. *See under* Inspection of Machinery and Scaffolding Act.

Windorah Sub-artesian Bore. *See under* Artesian Bores. No. 59.

Windsor Co. Gregory North Dist. *See map*, Pl. 20.

Windsor Extended Goldfield—

Situation: *See maps*, Pls. 16, 17. Twenty-two miles S.S.W. of Charters Towers. *Co.* Davenport; *Dist.* Kennedy North. Centre—about *Lat.* 20° 15′ S.; *Long.*, 146° 5′ E.

Discovery: In 1894. Population: Under 20.

Proclamation of Field: First gazetted, 30th May, 1894; last alteration, 16th February, 1907, as follows:—Commencing at the south-east corner of Powlathanga Block No. 3, and bounded thence on the east by the Windsor Lease bearing south about five miles; on the south by a line bearing west about one mile and a-half to Oaky Creek; on the west by Oaky Creek upwards to the south boundary of Powlathanga Block No. 3; and on the north by that boundary bearing east about three miles to the point of commencement.

Area: 5,730 acres (nearly 9 sq. miles).

Mineral Statistics: Gold. *Included in* "Other Goldfields" *in stat. tables and diagram*, Pls. 36, 46, 46a, 47.

Mineral Reference: Gold, *see* 3988. Geological Publications: Nil.

Warden and Inspector of Mines: Both stationed at Charters Towers.

Windsor Mineral Field—

Situation: *See maps*, Pls. 20, 21. The field is about 86 miles W.byN. of Winton. *Cos.* Brighton, Kynuna, Woodstock, and Workingham; *Dist.* Gregory North. Centre—about *Lat.*, 21° 30′ and 23° S.; *Long.*, 141° and 143° E.

Proclamation of Field: First (and only one) gazetted, 27th January, 1897, as follows:—Commencing at the south-east corner of Bagworth Block near the confluence of Crescent Creek with the Diamantina River, and bounded thence on the east by the north and west boundaries of Wombat, the west and south boundaries of Diamantina No. 8, the east and south boundaries of Mountain Vale, the east boundaries of Hughenden Manor, part of the south boundary of Hughenden Manor, the east and south boundaries of Ada No. 7, the west boundaries of Roma No. 2, the east boundaries of Mirra Munda No. 1. and Ada No. 1; on the south by the north-east and part of the north-west boundaries of Cadell No. 2, the north-east boundaries of Middleton No. 1, the north-west boundaries of Brighton Downs No. 10; on the south-west by boundaries of Brighton Downs No. 11 and Varna, by the north-east boundaries of Brighton Downs No. 9 and Hawthorne No. 8; on the west by the east boundary of Tooleybuck No. 7, by part of the south boundary of Tooleybuck No. 9, by the south and east boundaries of Tooleybuck No. 15, by part of the south boundary of Bell east, by the east boundaries of Bell, Kirby, and Rangeview to the Diamantina River; and on the north by that river downwards to the point of commencement.

Windsor Mineral Field—*continued:*

Area: 1,898,240 acres (2,966 sq. miles).

Principal Mining Centres: Kynuna Opal Field, *which see.*

Mineral Statistics: Opal, *see stat. tables,* Pls. 44, 46, 46a.

Mineral Reference: Precious Opal, *see* 6940.

Geological Note: The rocks are "Desert Sandstone" (Upper Cretaceous) resting on "Rolling Downs" Formation (Lower Cretaceous). Opal is found at Kynuna in sandstone bands in the "Desert Sandstone." *See* G.S.Q. Pub. No. 177 for details.

Geological Publication: Report No. 177 (1902). *See* Geol. Surv. Pub. List for title of report.

Warden: At Charleville and at Thargomindah. Inspector of Mines: At Gympie.

Windsor Mine, Mt. Morgan (Crocodile) Goldfield. *Min.Ref.* Gold, *see* 4384; Iron Pyrites, 5437.

—— Gold Mines, and Block Mine, Windsor Goldfield. *Min.Ref.* Gold, *see* 3988.

Windula Co. Gregory South Dist. *See map,* Pl. 18.

Wingara Sub-artesian Bores. *See under* Artesian Bores. No. 427.

Winter Bore. *See under* Artesian Bores. No. 358.

Winton, 368 miles (by rail) S.W. of Townsville. *Lat.,* 22° 33′; *Long.,* 143° 7′.

Geological Note: The rocks in the vicinity belong to the Rolling Downs Formation, with occasional patches of Desert Sandstone forming an unconformable covering. The Rolling Downs Formation in this district contains artesian water in abundance, and coal seams have been passed through in several of the bores put down for water.

Railway Base for Opalton (Fermoy), Black Knob, and Horse Cr. Opal Mines, in the Opalton Mineral Field; and Kynuna Opal Mines, in the Windsor Mineral Field.

Mineral References: Alabaster, 4633; *see* Coal, 1640-1642; Gypsum, 4616, 4616a; Selenite, 4641.

Winton Bores. *See under* Artesian Bores. Nos. 57, 58, 60, 131, 442, 443. Recently (1913) a bore 500 feet deep was sunk for coal near the town, but failed to find the seam of coal reported to occur in one of the artesian bores.

Winton's (J. H.) Sub-artesian Bore. *See under* Artesian Bores. No. 139.

Wire Gold. *See under* Gold.

Wirrarah Bore. *See under* Artesian Bores. No. 254.

Wise's Lease, Oaks Gold and Mineral Field. *Min.Ref.* Gold, *see* 3795, 3796.

—— Shaft, Wise's Knob, Oaks Goldfield. *Min.Ref.* Copper Pyrites, *see* 2178; Gold, 3796; Iron Pyrites, 5086; Silver, 7463.

Witherite. *Compo.,* Carbonate of barium. *Colour* and *Streak,* white. *Lustre,* vitreous. *H.* = 3-3·75; *Sp.gr.* = 4·29-4·35. *Contents* (*max.*), Baryta 77 per cent.

Uses: *See* note under Barium.

7926. ——. Springsure, 206 miles W.S.W. of Rockhampton (br. of Central line from Emerald). *Co.* Denison; *Dist.* Leichhardt. *Ref.* P.R.S.Q., vol. 4, p. 75 (1887).

Withersfield, 205 miles W. of Rockhampton (Central Rail. line). *Lat.,* 23° 32′ S.; *Long.,* 147° 38′ E. Sapphires found on Retreat Cr. in 1878. *See* notes on Sapphires *under* Anakie. *Min.Ref.* Azurite, *see* 234a; Bornite, 430b; Garnet, 3135; Gold, 3364; Hyacinth, 8238; Ironstone, 5598; Limonite, 5894; Magnetite, 6026a, 6030; Malachite, 6334, 6335; Tourmaline, 7866; Zircon, 8238.

Without-a-Friend, Glastonbury Goldfield. *Min.Ref.* Gold, *see* 4399.

Witt Island. *See under* Port Curtis Islands.

Witty's Freehold (Por. 239), 1 mile W. of Ormeau Rail. Stn. (South Coast line). *Min.Ref.* Gold, *see* 4225A, 4226; Iron Pyrites, 5350A; Mispickel, 6782.

Wivenhoe, about 5 miles N.W.byN. of Fernvale Rail. Stn. *Min.Ref.* Hematite, *see* 4775.

Wodehouse Co. Leichhardt Dist. *See map*, Pl. 10.

Wodonga Cr., trib. of Widgee Cr., Gympie. *Min.Ref.* Asbestos, *see* 116; Chrysolite, 7399.

Wogganoora Bore. *See under* Artesian Bores. No. 237.

Wokingham Bore. *See under* Artesian Bores. No. 149.

—— Co. Gregory North Dist. *See map*, Pl. 20.

Wolca Copper Lodes, 6 miles N.N.W. of Mt. Perry Rail. Stn. *Lat.*, 25° 9′ S.; *Long.*, 151° 39′ E. *Min.Ref.* Copper Pyrites, *see* 2130A; Iron Pyrites, 4993A; Molybdenite, 6818; Silver, 7433; Tourmaline, 7821.

Wolf (Cinnabar) Lode, Kilkivan Goldfield. *Min.Ref.* Calcite, *see* 556; Cinnabar, 1560.

Wolf's Gully, Clermont Goldfield. *Min.Ref.* Gold (alluvial), *see* 3332.

Wolfang Run, 15 miles N.E. of Clermont. *Lat.*, 22° 32′ S.; *Long.*, 147° 55′ E. *Min.Ref.* Aragonite, *see* 90.

Wolfram. *Syn.* Wolframine. *Compo.*, Tungstate of iron and manganese. *Colour and Streak*, black, brownish black. *Lustre*, sub-metallic, shining or dull. *H.* = 5. *Sp.gr.* = 7·2-7·5. *Contents* (*max.*), Tungstic acid 76 per cent. (= Tungsten 60 per cent.).

MINERAL AND GEOLOGICAL NOTE: *Associated Minerals* comprise Molybdenite, Cassiterite, Mispickel, Bismuth (native), Bismuthinite, Monazite, Scheelite, Ilmenite, Copper Pyrites, Iron Pyrites, Galena, Iron Ores, Tourmaline, Topaz, Biotite, Muscovite, Garnet, Felspar, Fluorspar, etc., etc. *Gangues:* Quartz, mica, chlorite, felspar, and fluorspar. *Country Rocks:* Usually granite, greisen, aplite, quartz felsite, greywacke, slate, schist, diorite, and serpentine, or one or more of these rocks in association. For uses *see notes under* Tungsten.

GEOGRAPHICAL NOTE: The mineral is found in many places in the State, but principally at Wolfram Camp, Bamford, Coolgarra, Koorboora (Neville's Mine), Mt. Carbine, Fossilbrook, and Tate River, all in the Herberton and Chillagoe Gold and Mineral Fields, Northern Queensland. It also occurs, and has been mined to some extent, in the following localities:—Port Douglas district, Kangaroo Hills Mineral Field, Ollera Creek to the north of Townsville, Pascoe River, Rocky Goldfield, Noble Island, Rosedale Mineral Field, etc. The mines at Wolfram Camp, Bamford, and Koorboora, in the Chillagoe Field, have furnished the great bulk of Queensland's supply. *See under* names of Fields and Mining Centres for descriptions. *See also maps*, Pls. 3, 9, 17.

DISCOVERY: Wolfram deposits were first found at Wolfram Camp, on the Hodgkinson Goldfield, in 1894, the Bamford deposits being discovered soon after. Ollera Creek Wolfram Mines were discovered in 1899.

STATISTICAL NOTES: The largest yield of wolfram was in the year 1904, when over 1,538 tons were obtained, of an estimated value of £161,635, the percentage of which, to the total yield and value of wolfram to the end of the year 1912, is, in production, 18·42 per cent., in value, 21·97 per cent.

The wolfram mines, in the Herberton and Chillagoe Gold and Mineral Fields, between the years 1895 and 1912, furnished 4,940 tons; the wolfram mines on the Hodgkinson Goldfield yielded, from years 1894 (first recorded yield of wolfram) to 1912, 2,912 tons; the former production equals 59·16 per cent. and the latter 34·88 per cent. of Queensland's total yield of wolfram to the end of the year 1912.

The total output of wolfram from all sources in Queensland to the end of the year 1912 is estimated to be, approximately, 8,350·25 tons, of a value of £735,665; this is equal to ·70 per cent. of the total estimated value of all the minerals produced in the State.

Wolfram—*continued:*

Statistical Tables and Diagrams: *See* Pls. 42, 45, 46, 46a, 54.

Fields and Mining Centres (further references given under names of fields):

Almaden. *See maps*, Pls. 8, 9, 22.
Bamford. *See maps*, Pls. 8, 9, 22.
Blackfellow's Cr. *See maps*, Pls. 8, 9, 22.
Boonmoo. *See maps*, Pls. 8, 9, 22.
Bower Bird. *See maps*, Pls. 8, 9, 22.
California Cr. *See maps*, Pls. 8, 9, 22.
Coolgarra. *See maps*, Pls. 16, 17, 22.
Desert Cr. *See maps*, Pls. 8, 9, 22.
Eight-mile Mt. *See maps*, Pls. 8, 9, 22.
Emuford. *See maps*, Pls. 8, 9, 22.
Fisherton (Tate R.). *See maps*, Pls. 8, 9, 22.
Four-mile Mt. *See maps*, Pls. 8, 9, 22.
Garden Cr. *See maps*, Pls. 8, 9, 22.
Glen Atherton (Tinaroo Cr.). *See maps*, Pls. 8, 9, 22.
Herberton. *See maps*, Pls. 16, 17, 22.
Koorboora. *See maps*, Pls. 16, 17, 22.
McCord's Cr. *See maps*, Pls. 8, 9, 22.
Mt. Carbine. *See maps*, Pls. 8, 9, 22.
Nettle Cr. *See maps*, Pls. 16, 17, 22.
Nightshade. *See maps*, Pls. 8, 9, 22.
Noble Is. *See maps*, Pls. 8, 9.
Ollera Cr. *See maps*, Pls. 16, 17.
Parada. *See maps*, Pls. 8, 9, 22.
Pinnacle Cr. *See maps*, Pls. 8, 9, 22.
Rose's Cr. *See maps*, Pls. 8, 9, 22.
Rosedale. *See maps*, Pls. 2, 3.
Spring Cr. *See maps*, Pls. 8, 9, 22.
Stannary Hills. *See maps*, Pls. 8, 9, 22.
Stanthorpe. *See maps*, Pls. 12, 13, 30.
Tableland. *See maps*, Pls. 8, 9, 22.
Tate R. (Fisherton). *See maps*, Pls. 8, 9, 22.
Tinaroo (Glen Atherton). *See maps*, Pls. 8, 9, 22.
Wolfram Camp. *See maps*, Pls. 8, 9, 22.

Bibliography: *Principal Ref.* Cameron (W. E.)—G.S.Q.P. No. 188 (1901); Jackson (C. F. V.)—Q.G.M.J. Rep. No. 60 (1905). Dunstan (B). Supplementary Report, No. 109. *See* Geol. Surv. List, Supplementary Report List, and Gov. Min. Jour. List for titles.

7927. Wolfram. *Assoc.with* Molybdenite and Cassiterite, in small quartz leader, in quartz felsite. *Loc.* Right-hand branch Ten-mile Cr., Stanhills, 12 to 24 miles S.E. of Croydon. *Co.* Esmeralda; *Dist.* **Burke.** *Ref.* B.D.

7928. ——. *Assoc.with* Cassiterite, Mispickel, and Tourmaline, in talcose quartz. *Loc.* Gladstone Tin Mine, Mt. Amos, 20 miles S.S.E. of Cooktown, Annan R. Tinfield. *Co.* Banks; *Dist.* **Cook.** *Ref.* G.S.Q. Pub 66, p. 9 (1891).

7929. ——. *Assoc.with* Cassiterite, Mispickel, Tourmaline, and Talc, in quartz. *Loc.* Mt. Amos Tin Mine, Annan River Tinfield (*ante*). *Ref.* G.S.Q. Pubs. 35 (1889), 66 (1891).

7930. ——. *Assoc.with* Cassiterite, Mispickel, Tourmaline, and Felspar, in quartz. *Loc.* Wright's Lease (99), Black Prince Lode, Mt. Hartley, 4½ miles E. of Rossville, 26 miles S.S.E. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 66, p. 7 (1891), and B.D.

7931. ——. Mt. Hartley Tin Mines, head of Wallaby Cr., 4½ miles E. of Rossville (*ante*). *Ref.* B.D.

7932. ——. Mt. Romeo Tin Mines, 5 miles S.S.W. of Rossville, about 28 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* B.D.

7933. ——. *Assoc.with* Cassiterite. *Loc.* Tableland Tin Mine, Mungumby Cr., 22 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.M.

7934. ——. *Assoc.with* Tourmaline, in quartz reef. *Loc.* Rossville, 26 miles S. of Cooktown, Annan R. Tinfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 6 (1889).

7934a.——. In alluvial deposits. *Loc.* Mt. Windsor, between Normanby and Mitchell R., 35 miles N.W. of Mt. Spurgeon, 57 miles N.W. of Port Douglas. *Co.* Banks; *Dist.* Cook. *Ref.* A.R.D.M., 1908, p. 49.

7935.——. *Assoc.with* Bismutite and Molybdenite, with traces of Hematite, Limonite, Mispickel, and Scorodite, in quartz, chlorite, muscovite, and felspar. *Loc.* Blackfellow's Cr., br. of Lynd R., 10 miles W. of Fossilbrook, 40 miles S.W. of Almaden Rail. Stn. (Chillagoe line), **Walsh and Tinaroo Mineral Fields.** *Co.* Bolwarra; *Dist.* Cook. *Ref.* B.D.

7935a.——. In lodes. Fulford Cr., br. of Lynd R., 20 miles S.W. of Fisherton, Tate R., 50 miles S.W. of Almaden (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields (*ante*).

7936. ——. *Assoc.with* Cassiterite, Molybdenite, Scheelite, Native Bismuth, and Bismutite, with traces of Copper Pyrites, in quartz, chlorite, and muscovite. *Loc.* Pinnacle Cr., br. of Lynd R., 16 miles W. of Fossilbrook, 50 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7937. ——. *Assoc.with* Molybdenite and Bismutite, in quartz, fluorspar, etc. *Loc.* Rose Cr., br. of Lynd R., 6 miles S.W. of Fisherton, Tate R., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7938. ——. *Assoc.with* Cassiterite and Molybdenite, in quartz and muscovite. *Loc.* Spring Cr., br. of Blackfellow's Cr., trib. of Lynd R., 12 miles W. of Fossilbrook, 45 miles S.W. of Almaden (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7939. ——. *Assoc.with* Cassiterite and Molybdenite, in quartz, muscovite, and chlorite. *Loc.* Tableland (The), head of Dixon's Cr. (br. of Lynd R.), 30 miles W. of Fossilbrook, 8 miles from Einasleigh R., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7939a.——. Dingo Mountain, 4 miles W. of Kirrama Stn., and 60 miles S.E. of Mt. Garnet, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Cook. *Ref.* *Telegraph* newspaper, 2nd Sept. (1910).

7940. ——. *Assoc.with* Molybdenite, Scheelite, Tungstite, Cassiterite, with traces of Tenorite, Malachite, Chrysocolla, Iron Pyrites, etc., in defined quartz lodes in slates, etc. *Loc.* Mt. Carbine, 11 miles W. of Port Douglas, 34 miles (*viâ* Mt. Molloy), N.N.W. of Biboohra Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Dagmar; *Dist.* Cook. *Ref.* B.D.

7941. ——. Mt. Pom Pom, 5 miles N.W. of Molloy Tramway line, 23 miles (by rail and road) N.N.W. of Biboohra Rail. Stn. (Cairns line). *Co.* Dagmar (*ante*).

7942. ——. *Assoc.with* Cassiterite, Molybdenite, Native Bismuth, Bismutite, Mispickel, and Scorodite; with traces of Cuprite, Tenorite, Malachite, Azurite, Iron Pyrites, Hematite, and Limonite, in irregular masses of quartz and greisen in granite. *Loc.* Boonmoo, 81 miles (by rail) S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

7943. ——. Clan Ronald Mine, Eureka Cr., nr. Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 125, p. 43 (1897).

7944. ——. *Assoc.with* Cassiterite. *Loc.* Rose of England Mine, Eureka Cr. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 59 (1887)

7945. ——. *Assoc.with* Monazite, Biotite, and Topaz, in quartz lode. *Loc.* Fingertown, 9 miles N. of Nymbool, Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

7945a.——. Glen Linedale, 11 miles N. of Mt. Garnet Rail. Stn. (br. of Chillagoe line), Walsh and Tinaroo Mineral Field (*ante*). *Ref.* A.R., p. 188 (1909).

7946. ——. *Assoc.with* Scheelite, Cuprite, Malachite, and Azurite, in defined quartz lode in slates. *Loc.* Parada Mines, Walsh R., 1 mile N. of Parada Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7947. ——. *Assoc.with* Molybdenite, Native Bismuth, and Bismutite, with traces of Hematite, Limonite, Mispickel, and Scorodite, in irregular masses of quartz and greisen, in granite. *Loc.* Stannary Hills, 93 miles (by rail) S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7948. ——. *Assoc.with* Native Copper and Copper carbonate, in lode. *Loc.* Argylla Tin Mine, Watsonville, head of James Cr., br. of Walsh R., 7 miles E.S.E. of Stannary Hills Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 25 (1883).

7949. ——. *Assoc.with* Cassiterite, Scheelite, Iron Pyrites, and Copper carbonate, in diorite dyke. *Loc.* Chance Tin Claim (*ante*). *Ref.* G.S.Q. Pubs. 118, p. 18 (1896), and 125, p. 40 (1897).

7950. Wolfram. *Assoc.with* Cassiterite, Garnet, and Felspar, in quartz. *Loc.* Dreadnought Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 26 (1883).

7951. ——. *Assoc.with* Cassiterite, Iron Pyrites, Chalcanthite, Fluorspar, and Chlorite. *Loc.* Glencairn Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 23 (1883), and 125, p. 40 (1897).

7951A. ——. *Assoc.with* Cassiterite, Copper Pyrites, Mispickel, Galena, Garnet, and Chlorite, in greywacke. *Loc.* King of the Ranges Tin Mines, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 222, pp. 41-50 (1910).

7952. ——. *Assoc.with* Cassiterite and Ironstone, in quartz. *Loc.* Parnell Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 23 (1883).

7953. ——. *Assoc.with* Cassiterite, Copper Pyrites, Cuprite, Azurite, Malachite, Iron Pyrites, Mispickel, Stannine, Ironstone, Fluorspar, and Chlorite. *Loc.* Stewart's T. Claim, Watsonville (*ante*). *Ref.* G.S.Q. Pubs. 13, p. 26 (1883), and 119, p. 15 (1897).

7954. ——. *Assoc.with* Copper Pyrites, Copper carbonate, Chalcanthite, Mispickel, Marcasite, Iron Pyrites, Limonite, Cassiterite, and Red and Yellow Ochre. *Loc.* Try Again and Chance Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

7955. ——. *Assoc.with* Cassiterite and Mispickel, in quartz. *Loc.* Victoria Tin Mine, Watsonville (*ante*). *Ref.* G.S.Q. Pub. 13, p. 24 (1883).

7956. ——. *Assoc.with* Molybdenite, Native Bismuth, Bismutite, Scheelite, Cassiterite, Bismuthinite, Manganese-dioxide, Mispickel, and Scorodite, with traces of Iron Pyrites, Hematite, Limonite, Mispickel, etc. *Loc.* Wolfram Camp, 12 miles W.N.W. of Dimbullah (Chillagoe line), Walsh and Tinaroo Mineral Field. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* B.D.

7957. ——. *Assoc.with* Molybdenite, Native Bismuth, and Bismutite, in quartz and fluorspar. *Loc.* Schardon's Mine, 4 miles N. of Almaden Rail. Stn. (Chillagoe line), 124 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* B.D.

7958. ——. *Assoc.with* Molybdenite, Native Bismuth, Bismutite, Scheelite, Molybdite, Mispickel, and Scorodite, in irregular quartz masses in greisen. *Loc.* Bamford Wolfram Mines, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7959. ——. *Assoc.with* Cassiterite and Molybdenite, in veins of coarse mica and quartz in greisen. *Loc.* California Cr., nr. Ord Rail. Stn. (Mt. Garnet Br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7960. ——. *Assoc.with* Molybdenite, Cassiterite, Monazite, Mispickel, and Iron Pyrites, in quartz and mica in greisen country. *Loc.* California Cr. (*ante*). *Ref.* B.D.

7961. ——. *Assoc.with* Monazite and Cassiterite. *Loc.* Emerson's Wolfram Mine, nr. head of California Cr., 6 miles E. of Ord Rail. Stn. (Mt. Garnet line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7962. ——. *Assoc.with* Scheelite, in quartz. *Loc.* Desert Cr., br. of Lynd R., 9 miles S.S.W. of Fisherton, Tate R., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7963. ——. *Assoc.with* Molybdenite, Scheelite, Tungstite, Native Bismuth, and Bismutite, in quartz. *Loc.* Eight-mile Mt., 8 miles N.N.W. of Fossilbrook, 28 miles S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7964. ——. *Assoc.with* Native Bismuth, Bismuthinite, Bismite, and Cassiterite, in quartz, muscovite, fluorspar, etc. *Loc.* Emuford, Emu Cr., br. of Walsh R., 11 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7965. ——. *Assoc.with* Bismutite, in quartz. *Loc.* Fisherton, Tate R., 24 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7966. ——. *Assoc.with* Cassiterite, in quartz, fluorspar, etc. *Loc.* Garden Cr., 4 miles N. of Fisherton, Tate R., 20 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7967. ——. *Assoc.with* Cassiterite and Hematite. *Loc.* Gurrumba, Reid's Cr., Emu Cr., 2 miles S. of Emuford, 12 miles S.E. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Assay:* Tin Oxide = 72·8 per cent., Tungstic Acid = 4·8 per cent., Iron Oxide = 2·4 per cent. *Ref.* A.R., p. 47 (1906).

7968. ——. *Assoc.with* Cassiterite and Galena, in chlorite, muscovite, and fluorspar. *Loc.* Koorboora Mines, 108 miles S.W. of Cairns, Walsh and Tinaroo Mineral Fields *ante*). *Ref.* B.D.

7968A.——. *Loc.* Neville Mine, 1 mile S. of Koorboora (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7969. ——. *Assoc.with* Cassiterite, Molybdenite, Bismutite, Chalcolite, and Topaz, in small veins in a large quartz topaz lode in granite. *Loc.* Lappa Wolfram Lode, 2½ miles S.S.W. of Lappa Junction (Chillagoe-Mt. Garnet line), 102 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7970. ——. *Assoc.with* Native Bismuth. *Loc.* Lappa Wolfram Lode (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 50 (1900).

7971. ——. *Assoc.with* Cassiterite and Bismutite, in quartz, fluorspar, etc. *Loc.* McCord's Cr., 5 miles N.N.W. of Fisherton, Tate R., 20 miles W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7971A.——. *Assoc.with* Scorodite, in quartz. *Loc.* Mark Tapley Mine, Mungana, 149 miles (by rail) W.S.W. of Cairns (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* A.R., p. 234 (1910).

7971B.——. *Assoc.with* Molybdenite, in quartz. *Loc.* Wolfram Mine, ½-mile from eastern bank of Copperfield R., 12 miles S. of Kidston, Etheridge Goldfield. *Co.* Lyndhurst; *Dist.* Cook. *Ref.* G.S.Q. Pub. 234, p. 30 (1911).

7972. ——. In quartz leaders. *Loc.* Noble Island, Princess Charlotte Bay, about 74 miles W.byN. of Cooktown. *Co.* Melville; *Dist.* Cook. *Ref.* B.D.

7973. ——. *Assoc.with* Bismutite. *Loc.* Dead Finish Mine, Barron R., 5 miles from Tolga Rail. Stn., 69 miles (by rail and road) S.W.byS. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* Cook. *Ref.* B.D.

7974. ——. In defined quartz lodes in slate. *Loc.* Bower-Bird, 7 miles S.S.W. of Pt. Douglas, 9 miles N.N.E. of Mt. Molloy, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7975. ——. *Assoc.with* Molybdenite, Scheelite, and Cassiterite, with traces of Malachite, Azurite, and Iron Pyrites, in defined quartz lodes and leaders in granite. *Loc.* Glen Atherton (Tinaroo), 12 miles S.E. of Mareeba Rail. Stn., 18 miles S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7976. ——. *Assoc.with* Molybdenite, with traces of Bismuth, and Copper carbonate, in quartz. *Loc.* Leases 1988 and 1989, Tinaroo Cr., 14 miles S.S.E. of Mareeba, 6 miles N.N.E. of Tolga (Cairns Rail. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 188, pp. 12, 13 (1903).

7977. ——. Rocky Goldfield, 26 miles N.E. of Coen, 71 miles N.N.W. of Port Stewart. *Co.* Sidmouth; *Dist.* Cook. *Ref.* G.S.M.

7978. ——. *Assoc.with* Cassiterite and Molybdenite, in quartz and chlorite. *Loc.* Nightshade, Fossilbrook, 34 miles S.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook. *Ref.* B.D.

7979. ——. *Assoc.with* Cassiterite, Bismutite, and Molybdenite, in quartz, chlorite, and muscovite. *Loc.* Four-mile Mt., 4 miles N.W. of Fossilbrook, 35 miles S.W. of Almaden, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

7980. ——. *Assoc.with* Cassiterite, in quartz lodes. *Loc.* Red River, Walsh and Tinaroo Mineral Fields. *Dist.* Cook.

——. *See* other Walsh and Tinaroo References, No. 8006, etc.

7981. ——. *Assoc.with* Bismuth, in gneiss and mica schist. *Loc.* nr. Brookland Stn., Junction Cr., Einasleigh R., 30 miles S. of Fossilbrook. *Co.* Tate; *Dist.* Cook. *Ref.* G.S.Q. Pub. 134, p. 19 (1898).

7982. ——. Bowden Mineral Field, Pascoe R., Weymouth Bay, Cape York Peninsula, 240 miles N.W. of Cooktown. *Co.* Weymouth; *Dist.* Cook.

7983. ——. *Assoc.with* Cassiterite and Molybdenite, in quartz and greisen. *Loc.* Shannon's Reef (Block 459), Brown's Gully, nr. Sugarloaf Mt. 7½ miles E.byS. of Stanthorpe. *Co.* Bentinck. *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 44 (1898).

7984. ——. *Assoc.with* Cassiterite, in quartz and greisen. *Loc.* Block (450). Dolcoath Cr., trib. of Quart Pot Cr., 3 miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 46 (1898).

7985. —— (in traces). *Assoc.with* Molybdenite, in small veins of quartz, with greisen and granite. *Loc.* On ranges W. of Dolcoath Cr., and 1 mile N. of Quart Pot Cr., 3 miles E.byS. of Stanthorpe (*ante*). *Ref.* B.D.

7986. ——. *Assoc.with* Cassiterite, Molybdenite, Copper Pyrites, in quartz vein, in greisen. *Loc.* Kettle Swamp Cr., trib. of Quart Pot Cr., Stanthorpe. *Co.* Bentinck; *Dist.* Darling Downs. *Ref.* G.S.Q. Pub. 125, p. 29 (1897), and G.S.M.

7986a. Wolfram. *Assoc.with* Cassiterite, in quartz and greisen. *Loc.* Lord Nolan's Claim, Stanthorpe (*ante*). *Ref.* A.R., pp. 326-328 (1911).

7987. ——. In quartz. *Loc.* Mt. Marlay, Lode Cr., 1¼ mile N.E.byE. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 125, p. 29 (1897).

7988. ——. *Assoc.with* Cassiterite and Molybdenite, in quartz and greisen. *Loc.* Noble and Lode Cr. Tin Mines, Blocks (351, 352), 6¼ miles E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 45 (1898), and G.S.M.

7989. ——. *Assoc.with* Cassiterite and Iron Pyrites. *Loc.* Brere's Claim, Pikedale Cr., 9 miles W.byN. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub., 120, p. 47 (1898).

7990. ——. *Assoc.with* Gold, Cassiterite, Mispickel, and Molybdenite, in quartz and greisen. *Loc.* Pikedale Lode, Pikedale Cr., 70 miles W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay: See* No. 3840. *Ref.* G.S.Q. Pubs. 40 (1887), and 120 (1898).

7991. ——. *Assoc.with* Cassiterite, in stockwerks in granite. *Loc.* Storm King and Lady Normanby Claims, and Welsby's Shaft, Blocks 588, 589, 609, Quart Pot Cr., nr. Mountain Station Gully, 5 miles S.E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, pp. 46, 47 (1898).

7992. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Quart Pot Cr. and its tributaries, Stanthorpe (*ante*). *Ref.* G.S.Q. Pub. 120, pp. 33-35 (1898).

7993. ——. *Assoc.with* Cassiterite, in quartz reefs. On ridges, left bank of Quart Pot Cr., Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 12, p. 2 (1882).

7994. ——. *Assoc.with* Cassiterite, Molybdenite, and Molybdite, in quartz and greisen. *Loc.* Burnt Hut, Severn R., 6 miles W.byS. of Ballandean, 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, P. 48 (1898).

7994a. ——. *Assoc.with* Bismutite and Cassiterite. *Loc.* Burnt Hut (*ante*). *Ref.* A.R., p. 173 (1909).

7995. ——. In quartz lode. *Loc.* Carpenter's Gully Tin Mines, nr. Severn R., 12 miles S.W. of Ballandean, 26 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

7996. ——. *Assoc.with* Molybdenite, Cassiterite, Iron Pyrites, Mispickel, and Scorodite, in quartz. *Loc.* P. Area 48, Sluicers' Claim, Severn R., 6 miles W. of Ballandean Rail. Stn., 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 191, p. 10 (1904).

7997. ——. *Assoc.with* Cassiterite, Copper Pyrites, Chrysocolla, and Mispickel, in quartz. *Loc.* Great Eastern Tin Mine, Block 24, Red Rock Cr., Severn R., 11 miles W.S.W. of Ballandean, 25 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 49 (1898).

7998. ——. *Assoc.with* Cassiterite and Copper Ores, in several quartz lodes in granite country. *Loc.* Severn R., 7 miles W. of Ballandean, 21 miles (by rail and road) S.S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

7999. ——. *Assoc.with* Cassiterite, in quartz and greisen. *Loc.* Between Blocks 248 and 443, Sugarloaf Mountain, 8 miles E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 44 (1898).

8000. ——. In quartz. *Loc.* Christian Cr., Sugarloaf, about 4 miles E.byN. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

8001. ——. In quartz lode. *Loc.* Sel. 451W), McLeod's Gully, nr. Sugarloaf Mt., 7½ miles E.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

8002. ——. *Assoc.with* Cassiterite. *Loc.* S.W. of Trollope's Hill, nr. Sugarloaf Mt., 7½ miles E.byS. of Stanthorpe (*ante*). *Ref.* G.S.Q. Pub. 120, p. 44 (1898).

8003. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* 13-Mile Cr., trib. of Sugarloaf Cr., 4 miles E.S.E. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 4 (1898).

8004. ——. *Assoc.with* Copper Pyrites, Cassiterite, Zinc Blende, Mispickel, Calcite, Chlorite, and Orthoclase, in quartz lode. *Loc.*Sundown Copper Mine, Sundown Cr., 12 miles S.W. of Ballandean, 26 miles S.W.byS. of Stanthorpe Rail. Stn. *Co.* Bentinck (*ante*). *Assay: See* No. 2192. *Ref.* G.S.Q. Pub. 191, p. 22 (1904), G.S.M., and B.D.

8005. ——. *Assoc.with* Mispickel and Cassiterite. *Loc.* Clare's Open Cut, nr. Sundown Mine, Sundown Cr. (*ante*). *Ref.* G.S.Q. Pub. 191, p. 23 (1904)

8006. ——. In quartz. *Loc.* Beaconsfield Tin Mine, Coolgarra, 12 miles N.E.byN. of Mt. Garnet, Chillagoe and Mt. Garnet Rail. line, **Walsh and Tinaroo Mineral Fields.** *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.Q. Pub. 72, p. 3. (1891).

8007. ——. Bismarck Mine, Coolgarra (*ante*). *Ref.* G.S.M.

8008. ——. *Assoc.with* Cuprite, Malachite, and Azurite, in quartz. *Loc.* Round Mountain, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 4 (1891).

8009. ——. *Assoc.with* Cassiterite, Azurite, Malachite, Websterite, Iron Pyrites, Mispickel, Göthite, Limonite, Hematite, Chlorite, Penninite, and Topaz, in irregular masses of quartz in slate. *Loc.* Tin Mines, Coolgarra (*ante*). *Ref.* G.S.Q. Pub. 72, p. 2 (1891).

8010 ——. *Assoc.with* Mispickel. *Loc.* Devon Wolfram Mine, 3 miles from Coolgarra, 15 miles N.E.byN. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* B.D.

8011. ——. *Assoc.with* Stibnite. *Loc.* Birthday Mine, Dry R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

8012. ——. Woodleigh, Herbert R., 11 miles E. of Mt. Garnet, Chillagoe and Mt. Garnet Rail. line, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 58 (1900).

8013. ——. *Assoc.with* Cassiterite and Fluorspar, in chloritic rock. *Loc.* Bradlaugh Tin Mine, Herberton, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 13, p. 15 (1883).

8014. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Cornstalk Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 10 (1883).

8015. ——. *Assoc.with* Cassiterite, Ilmenite, Topaz, with traces of Gold, in alluvial deposits. *Loc.* Deep Lead, Herberton (*ante*). *Ref.* G.S.Q. Pub. 115, pp. 1-15 (1896).

8016. ——. *Assoc.with* Cassiterite and Fluorspar, in quartz lode. *Loc.* Defiance Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 7 (1883).

8017. ——. Elephant Mine, 1½ mile S.S.E. of Herberton (*ante*).

8018. ——. *Assoc.with* Cassiterite, in serpentinous rock, and in quartz. *Loc.* Glanmire Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 12 (1883), and G.S.M.

8019. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Gt. Northern Tin Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 125, p. 43 (1897).

8020. ——. *Assoc.with* Cassiterite, Iron Pyrites, and Fluorspar, in quartz. *Loc.* Leviathan Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 14 (1883).

8021. ——. *Assoc.with* Cassiterite, in chloritic quartz. *Loc.* Ly-e-moon Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 7 (1883).

8022. ——. *Assoc.with* Cassiterite and Mica. *Loc.* Nelly Grant Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 7 (1883).

8023. ——. *Assoc.with* Cassiterite and Fluorspar, in quartz lode. *Loc.* Nova Scotia Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 11 (1883), and G.S.M.

8024. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* Perseverance Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 19 (1883).

8025. ——. *Assoc.with* Cassiterite, Orthoclase, Steatite, Chlorite, and Serpentine, in quartz lode. *Loc.* Soggaorth Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 6 (1883), and P.R.S.Q., vol. 4, p. 59 (1887).

8026. ——. *Assoc.with* Cassiterite, in quartz. *Loc.* True Blue Mine, Herberton (*ante*) *Ref.* G.S.Q. Pub. 13, p. 16 (1883).

8027. ——. Wild Irishman Mine, 1 mile E. of Herberton (*ante*). *Ref.* G.S.M.

8028. ——. *Assoc.with* Cassiterite and Fluorspar, in lodes. *Loc.* Wild River Tin Mines, Herberton (*ante*). *Ref.* G.S.Q. Pub. 9, p. 8 (1881).

8029. ——. *Assoc.with* Cassiterite and Molybdenite, in diorite. *Loc.* Young American Mine, Herberton (*ante*). *Ref.* G.S.Q. Pub. 13, p. 9 (1883).

8030. ——. *Assoc.with* Cassiterite, Molybdenite, Wad, Scheelite, and Monazite, in irregular masses and defined lodes, in slates and greisen. *Loc.* Nettle's Creek, 4 miles E. and 3 miles S.E. of Coolgarra, and between 10 and 14 miles N.E. of Mt. Garnet, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* B.D.

8030a.——. Onion Swamp Mines, 4 miles N.N.E. of Nymbool Rail. Stn. (Mt. Garnet line), near Main Dividing Range, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* B.D.

——. *See* other Walsh and Tinaroo References, No. 7935, etc.

8031. ——. Fanning River, 28 miles (by road) N.W. of Ravenswood Junction. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.M.

8031a.——. In quartz lode in granite country. Close to rail. line, 8½ miles W. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* B.D.

8031B. Wolfram. Mount Fox, 30 miles S.W. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* O.R.

8032. ——. In lode. Oaky Cr., opposite Waverley battery, Kangaroo Hills Mineral Field, 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Ref.* A.R.D.M., p. 162 (1906).

8032A.——. *Assoc.with* Fluorspar, in lode. Krumholz's Lease, Running R., Kangaroo Hills Mineral Field (*ante*).

8033. ——. Ollera Cr. Wolfram Mines, Spur of Sea View Range, 27 miles S.S.E. of Ingham, and 38 miles N.W.byW. of Townsville. *Co.* Wilkie Gray; *Dist.* Kennedy North.

8034. ——. *Assoc.with* Garnet, Mica, Hematite, and Stilbite, in lode. *Loc.* Eungella Station, 30 miles W. of Mirani Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 39, p. 6 (1887).

8034A.——. In quartz. *Loc.* nr. Coolan's P.A., Mt. Wyatt Goldfield, about 60 miles S.S.E. of Ravenswood. *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* A.R., p. 235 (1910).

8034B.——. Coolan's Claim, Carmody Stn., Eukalunda, 92 miles S.W.byW. of Bowen. *Co.* Sellheim (*ante*).

8035. ——. *Assoc.with* Bismuth and Molybdenite. *Loc.* Wandoo and Bolingbroke Stations, 25 miles E.N.E. of Nebo, and about 40 miles S.S.W. of Mackay. *Co.* Ferguson; *Dist.* Leichhardt. *Ref.* L.C.B.

8036. ——. *Loc.* Cressbrook Creek, 3 miles N.E. of Toogoolawah Rail. Stn. (Esk line). *Co.* Cavendish; *Dist.* **Moreton.** *Ref.* L.C.B.

8037. ——. In quartz and greisen. *Loc.* Por. (1287), Crow's Nest, 34 miles (by rail) N.N.E. of Toowoomba. *Co.* Cavendish (*ante*). *Ref.* L.C.B.

8038. ——. *Assoc.with* Gold, Cassiterite, and Ilmenite, in quartz lode. *Loc.* Crow's Nest Tin Deposits, 3 miles E. of Crow's Nest Township, 37 miles (by rail and road) N. of Toowoomba. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 175, p. 4 (1902), and Q.G.M.J., vol. 4, pp. 527-529 (1903).

8039. ——. *Assoc.with* Scorodite, Iron Pyrites, Mispickel, Cerussite, and Massicot. *Loc.* Plant's Leasehold, 4 miles E. of Crow's Nest Rail. Stn., 38 miles (by rail and road) N.N.E. of Toowoomba. *Co.* Cavendish (*ante*). *Ref.* A.R., pp. 148, 149 (1908).

8040. ——. *Assoc.with* Molybdenite, Tungstite, Wad, Native Bismuth, and Bismutite, with traces of Copper Pyrites, Tenorite, Iron Pyrites, Hematite, etc., in defined quartz lodes in greisen and mudstone. *Loc.* Rosedale Wolfram Mine, nr. Rosedale Rail. Stn. (North Coast line), 34 miles (by rail) N.W. of Bundaberg. *Co.* Flinders; *Dist.* **Port Curtis.** *Assay:* Tungstic Acid = 70 per cent. *Ref.* B.D.

Wolfram Camp. (Lately named "Wolfram")—

Situation: *See map*, Pls. 8, 9, 22. The camp is about 12 miles W.N.W. of Dimbullah Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Hodgkinson; *Dist.* Cook. *Lat.*, 17° 10′ S.; *Long.*, 144° 59′ E. Wolfram was discovered here in 1894.

Population: Included in Chillagoe Returns.

Mineral Statistics: Bismuth, Wolfram, Molybdenite. *See under* Hodgkinson, *in stat. tables*, Pls. 40, 42, 46-46A.

Mineral References: Tin (Cassiterite), 922; Bismuth (native) 335, (Bismuthinite) 367, (Bismutite) 387, 388; Wolfram, 7956; Molybdenite, 6833; Molybdite, 6870; Scheelite, 7346; Manganese (dioxide), 6408; Iron (Mispickel) 6698, (Scorodite) 7366; Vanadium, 7916A; Galena, 2809A; Cairngorm, 7175.

Geological Note: The rocks consist principally of granite and quartz porphyry in association with masses of greisen. Wolfram, Bismuth, and Molybdenite, and other minerals occur in irregular lode formations in the greisen but close to the granite. This locality contains the richest Wolfram lodes in Queensland—perhaps in the world.

Geological Publication: Nos. 188 (1904), 196 (1905). *See* Geol. Surv. Pub. List for title of Reports.

Warden: Stationed at Thornborough; Inspector of Mines: Stationed at Herberton.

Wolfram in Queensland. *See under* Supplementary Report List, No. 109.

—— Mine, 12 miles S. of Kidston. *Min.Ref.* Molybdenite, *see* 6840A; Wolfram, 7971B.

Wollastonite. *Syn.* Tabular Spar. *Compo.,* Silicate of lime. *Colour* and *Streak,* whitish. *Lustre,* vitreous, on cleavage surfaces pearly. *H.* = 4·5-5; *Sp.gr.* = 2·8-2·9.

8041. ——. *Assoc.with* Epidote. *Loc.* On hill N.E. of Mt. Biggenden, 5½ miles W. of Biggenden Rail. Stn. (Gayndah line). *Co.* Cook; *Dist.* **Burnett.** *Ref.* G.S.M.

8042. ——. *Assoc.with* Garnet, Chert, Limestone, Epidote, Magnetite, and Limonite. *Loc.* Mt. Lucy, 4 miles W. of Almaden Rail. Stn. (Chillagoe line), 25 miles (by rail and road) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* **Cook.** *Ref.* G.S.Q. Pubs. 134, p. 16 (1898), and 196, pp. 6-8 (1905).

8043. ——. Penzance Mine, Redcap, 3 miles N.E. of Mungana (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

8044. ——. Pine Mt., 7 miles (by rail) N.N.W. of Ipswich, and 31 miles (by rail) W.S.W. of Brisbane. *Co.* Churchill; *Dist.* **Moreton.** *Ref.* P.R.S.Q., vol. 4, p. 65 (1887).

8045. ——. *Assoc.with* Silver, Ironstone, Epidote, and traces of Gold and Copper carbonate, in limestone, garnet rock, and granite. *Loc.* P.A. (49), Diglum Cr., Barmundoo, 28 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Ref.* G.S.Q. Pub. 162, pp. 6, 9 (1901).

8046. ——. *Assoc.with* Epidote and Garnet. *Loc.* Booreeco Cr., 30 miles S.W. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.M.

8046A. ——. *Assoc.with* Copper, etc. *Loc.* Mt. Hector Mine, 12 miles W.N.W. of Many Peaks Rail. Stn. (Boyne Valley line). *Co.* Clinton (*ante*).

8047. ——. *Assoc.with* Garnet. *Loc.* Gigoomgan Run, 35 miles W.S.W. of Maryborough. *Co.* Lennox; *Dist.* **Wide Bay.** *Ref.* G.S.M.

8048. ——. *Assoc.with* Garnet, in rock masses in altered limestone. *Loc.* Glenbar Stn., 20 miles W. of Tiaro Rail. Stn. (Gympie-Maryborough line). *Co.* Lennox (*ante*). *Ref.* L.C.B.

8049. ——. *Assoc.with* Garnet and Bornite, as rock mass in altered limestones. *Loc.* Munna Copper Mine, Por. (167), Marodian, 17 miles N. of Kilkivan. *Co.* Lennox (*ante*).

Wolseley Co. Mitchell Dist. *See map,* Pl. 18.

Wolston Creek, 2 miles N.W. of Wolston Rail. Stn. *Min.Ref.* Coal, *see* 1766.

Wonbah Hill, 12 miles (by rail) N.byW. of Mt. Perry. *Min.Ref.* Copper Oxide, *see* 2046B; Copper Pyrites, 2131; Gold, 3596.

—— —— Mine (near), N.byW. of Mt. Perry. *Min.Ref.* Copper Pyrites, *see* 2131A; Gold, 3596A; Limonite, 5828A; Malachite, 6196A.

Wondai, 101 miles S.W.byS. of Maryborough. *Min.Ref.* Ilmenite, *see* 4886.

Wondalli Estate Sub-artesian Bores. *See under* Artesian Bores. No. 108.

Wondoola Bore. *See under* Artesian Bores. No. 444.

—— Co. Burke Dist. *See map,* Pl. 20.

Wonga Flat Sub-artesian Bore. *See under* Artesian Bores. No. 118.

—— Wallen Cr., Coomera R. *Min.Ref.* Gold, *see* 4228; Ironstone, 5615; Limonite, 5904; Manganese-dioxide, 6457.

Wongalee Co. Burke Dist. *See map,* Pl. 20.

Wongarra Sub-artesian Bores. *See under* Artesian Bores. No. 200.

Wonomo Co. Burke Dist. *See map,* Pl. 20.

Wood Opal. *Var. of* Opal, *which see.*

Wood Tin. *Var. of* Cassiterite, *which see.*

Woodbine, Gatton. *Min.Ref.* Tripolite, *see* 7030.

—— Bore. *See under* Artesian Bores. No. 272.

Woodend Bore. *See under* Artesian Bores. No. 154 (Barcaldine).

Woodend Coal Bore, near Stanwell, Central Railway. *Par.* Stanwell; *Co.* Livingstone; *Dist.* Port Curtis. *Record.*—Shales, sandstones, and basalt in alternating beds down to 250 feet, then basalt to 410 feet, then through fault into amygdaloidal rock to bottom. Total depth, 420 feet. *Ref.* B.D. (1913).

Woodford, 40 miles N.W.byN. of Brisbane. *Min.Ref.* Copper Oxide, *see* 2050.

Woodlark Island (Murua Goldfield), Brit. New Guinea. *Min.Ref.* Gold (alluvial), *see* 3432, 3433, (reef) 4559, 4560; Iron Pyrites, 5477. *Note.*—Rocks on the island are granite porphyry and coral formation. The granite froms the high country, the coral the low level area.

Woodleigh Creek Bore. *See under* Artesian Bores. No. 358.

—— Station, 11 miles E. of Mt. Garnet (Chillagoe and Mt. Garnet Rail. line). *Min.Ref.* Wolfram, *see* 8012; Zinc Blende, 8115.

Woodman's Reef, Big Hill, Talgai Goldfield. *Min.Ref.* Gold, *see* 3862.

Woodmillar Scrub Bore. *See under* Artesian Bores. No. 109.

Woodstock Bore. *See under* Artesian Bores. No. 450.

—— Co. Gregory North Dist. *See map,* Pl. 20.

Woodville, Hodgkinson Goldfield. *Min.Ref.* Bismuth (native), *see* 330; Galena, 2765; Gold, 3762-3765; Iron Pyrites, 5059; Mispickel, 6685-6686; Stibnite, 7625, 7626; Zinc Blende, 8080.

Woogaroo Creek, 17 miles (by rail) S.W.byS. of Brisbane. *Min.Ref.* Gypsum, *see* 4630.

Woolein Creek, 62 miles S.byW. of Rockhampton. *Min.Ref.* Copper, *see* 1851; Gold, 4173.

Wooleebee Creek Bore. *See under* Artesian Bores. No. 408.

Woolerina Run Bores. *See under* Artesian Bores. No. 445.

Woolgar Co. Burke Dist. *See map,* Pl. 20.

Woolgar Goldfield—

Situation: *See map,* Pls. 20, 21. The field is about 97 miles (by coach) N. of Richmond, 404 miles (by rail and road) W.byS. of Townsville. *Cos.* Chudleigh and Woolgar; *Dist.* Burke. Centre—about *Lat.,* 19° 43′ S.; *Long.,* 143° 35′ E.

Population: Included in Etheridge Returns.

Proclamation of Field: First gazetted, 24th August, 1882; last alteration, 3rd July, 1897, as follows:—Commencing on the Woolgar River at its intersection by the northern boundary line of Merton Ponds Run, and bounded thence on the south-east by the northern boundaries of Merton Ponds, Boree, and Boree No. 1 east about twenty-three miles; thence by the west boundary of Hampstead Occupation License south about eleven miles, by the south boundary of same east about eight miles, by the east boundary of same north about eight miles, by the north boundary of Glenloth east about two miles, by the west boundary of Glenloth No. 1 and a line north about eighteen miles to the eastern watershed of the Woolgar River; and thence by that watershed northerly to the southern watershed of the Etheridge and Gilbert Rivers, on the north by that watershed westerly about twenty-four miles, and on the west by the western watershed of the Woolgar River southerly and south-easterly to the point of commencement.

Area: 727,680 acres (1,137 square miles).

Mineral Statistics: Gold. *Included in* Etheridge returns.

Mineral References: Gold, *see* 3562, 3563a; Silver, 7427; Lead (Galena), 2713, 2714; Copper, 1840; Bismutite, 378; Other Minerals—Garnet, 3095.

Geological Note: The rocks consist of a series of schists and quartzites of undetermined age, capped in places with tablelands of basalt and Desert Sandstone, and penetrated by dykes of diorite, etc. They contain quartz reefs which have yielded many thousands of ounces of gold. *See* G.S.Q. Pub. No. 92, p. 28, for details.

Geological Publications: Reports No. 48 (1888) and 92 (1892). *See under* Geol. Surv. Pub. List for title.

Warden: Stationed at Georgetown; Inspector of Mines: Stationed at Croydon.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

—— River, Cambridge Downs. *Min.Ref.* Muscovite, *see* 6885.

—— —— Bore. *See under* Artesian Bores. No. 187.

Woolgunnia Bore. *See under* Artesian Bores. No. 432.

Woolooga Estate, N.W.byW. of Gympie. *Min.Ref.* Manganese-dioxide, *see* 6494B; Tourmaline, 7874.

Woolscour Bores. *See under* Artesian Bores. Nos. 155, 170, 262, 316, 356, 367, 439.

Woolshed Bores. *See under* Artesian Bores. Nos. 141, 159, 177, 186, 189, 194, 195, 211, 229, 255, 324, 331, 356, 388, 410.

Woolshed Gully, Stanthorpe. *Min.Ref.* Calcite, *see* 489; Copper carbonate, 1903; Copper Pyrites, 2186; Galena, 2833; Ironstone, 5539; Manganese-dioxide, 6418; Redruthite, 7283; Zinc Blende, 8105.

Woolstone Bore. *See under* Artesian Bores. No. 185.

Woonegym Bore. *See under* Artesian Bores. No. 169.

Wooroolah Co. Mitchell Dist. *See map*, Pl. 18.

Wooroonga Co. Leichhardt Dist. *See map*, Pl. 10.

Wooroorooka Bore. *See under* Artesian Bores. No. 61.

Woowoonga (Por. 53v), 5 miles (by road) N.W. of Biggenden Rail. Stn. *Min.Ref.* Gold, *see* 3623; Iron Pyrites, 5006.

Works consulted in compiling this Index. *See* References.

Worna Creek Sub-artesian Bore. *See under* Artesian Bores. No. 157.

Woura Co. Mitchell Dist. *See maps*, Pl. 18.

Wowra Sub-artesian Bores. *See under* Artesian Bores. No. 121, 132.

Wright's Bores. *See under* Artesian Bores. Nos. 269, 351.

—— Colliery, North Ipswich Coal Area. *Min.Ref.* Coal, *see* 1758, 1759.

—— Leader, Etheridge Goldfield. *Min.Ref.* Anglesite, *see* 21D; Cerussite, 1190B; Galena, 2751A; Malachite, 6215B; Silver, 7449C.

—— Lease (99) (Black Prince Lode, Mt. Hartley, Annan Tinfield. *Min.Ref.* Cassiterite, *see* 801; Felspar, 2629; Mispickel, 6669; Tourmaline, 7838; Wolfram, 7930.

Wrotham Co. Cook Dist. *See map*, Pl. 8.

Wulfenite. *Compo.*, Molybdate of lead. *Colour*, wax-yellow, orange-yellow, greyish-white, and sometimes shades of red. *Streak*, white. *Lustre*, resinous. *H.* = 2·7-3·0. *Sp.gr.* = 6·7-7·0. *Contents* (*max.*), Molybdenum 26 per cent.

8049(1).—— (?) (tungsten-bearing tabular crystals). *Assoc.with* minute crystals of Pyromorphite in a matrix of porous ironstone and quartz. *Loc.* Christmas Gift Mine, Chillagoe, 139 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* G.S.M.

8049A.——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Buttercup Reef, Eungella Goldfield, 10 miles W. of Finch Hatton Rail. Stn. (Mackay line). *Co.* Carlisle; *Dist.* Kennedy South. *Ref.* G.S.Q. Pub. 229, p. 28 (1910).

Wyagampinny Mt., Motley Scrub, 7 miles N.byW. of Pittsworth. *Min.Ref.* Garnet, *var.* Pyrope, *see* 3167.

Wyandotte, S.E. of Mt. Surprise Rail. Stn. (Etheridge line). *Min.Ref.* Cuprite, *see* 2457A; Galena, 2953A; Malachite, 6288B, 6288C; Olivine, 6927A.

Wyandra (Claverton) Bores. *See under* Artesian Bores. No. 211.

Wyara Co. Warrego Dist. *See map*, Pl. 18.

Wyatt's Tin Claim, Watsonville. *Min.Ref.* Azurite, *see* 193; Chalcanthite, 1326; Copper Pyrites, 2165; Malachite, 6225; Tile Ore, 2548.

Wycarbah (Central Rail. line). *Min.Ref.* Kaolin, *see* 5701.

Wycheproof Stn., about 10 miles W.S.W. of Gladstone. *Min.Ref.* Limestone, *see* 716.

Wynnum Bore. *See under* Artesian Bores. No. 182.

Wyora Bore. *See under* Artesian Bores. No. 442.

Yaamba, 18 miles N.W.byW. of Rockhampton. *Lat.*, 23° 10′ S.; *Long.*, 150° 20′ E. *Min.Ref.* Galena, *see* 3063; Iron Pyrites, 5410.

—— Alluvial Bore. *See* Dunrobin Park *under* Gold Bores.

Yabba (Jimna) Goldfield—

Situation: *See maps*, Pls. 4, 5. The goldfield is 35 miles S. of Gympie. *Co.* Lennox; *Dist.* Wide Bay. Centre—about *Lat.*, 26° 40′ S.; *Long.*, 152° 35′ E.

Population: (Included in Gympie returns.)

Proclamation of Field: First (and only one) gazetted, 28th July, 1868, as follows:—Commencing at a spot one mile below the junction of Jimna Creek with Yabba Creek, and including all the country on the watershed of the Yabba Creek above that spot.

Area: 6,400 acres (10 sq. miles).

Leases: Gold-mining Leases, 3; area, 139 acres. Goldfields Miners' Homesteads in force, 9; area, 360 acres (1912).

Mineral Statistics: Gold. *Included in* "Other Goldfields" *in stat. tables and diagram*, Pls. 36, 46, 46A, 47.

Mineral References: Gold, *see* 4400; Lead (Galena), 3076; Iron (Iron Pyrites), 5447. Other Minerals: Ozokerite, 7060.

Geological Note: The rocks of this field are principally granite, slate, and sandstone. The reefs occurring in the granite contain very little quartz, and have not been productive for many years past. Much of the gold has been won from the extensive alluvial deposits of Jimna and Sandy Crs., where, in 1870, there were about 4,000 miners working. *See* G.S.Q. Pubs. 92, p. 18, and 169 for details.

Geological Publications: Reports Nos. 48 (1888) and 169 (1901). *See under* Geol. Surv. Pub. List for title.

Warden and Inspector of Mines: Both stationed at Gympie.

Reports: (Inspector's and Warden's) monthly (usually) in Q.G.M. Jour.; annually in A.R.D.M.

Yabba River, 8 miles from Kandanga. *Min.Ref.* Gold, *see* 4420.

Yagoonya Co. Cook Dist. *See map*, Pl. 8.

Yahmahnto Bores (no record). *See* note *under* Ipswich Coalfield *under* Coal Bores.

—— Coal Area, 5 miles (by rail) S. of Ipswich. *Min.Ref.* Coal, *see* 1728, 1728A, 1728B, 1728C.

Yallerci Bores. *See under* Artesian Bores. Nos. 125, 265.

Yam Creek, 25 miles W. of Cooktown. *Min.Ref.* Coal, *see* 1611.

Yamamilla Copper Freehold, Hamilton Group, Cloncurry. *Min.Ref.* Copper carbonate, *see* 1870.

Yan Yan Bore. *See under* Artesian Bores. No. 178.

Yanburra Bore. *See under* Artesian Bores. No. 198.

Yandarlo Sub-artesian Bores. *See under* Artesian Bores. No. 361.

Yandilla, 21 miles E.S.E. of Pittsworth. *Lat.*, 27° 47′ S.; *Long.*, 151° 30′ E. *Min.Ref.* Clay Ironstone, *see* 1586.

—— Station Sub-artesian Bores. *See under* Artesian Bores. No. 447.

Yandina, 69 miles (by rail) N. of Brisbane. *Lat.*, 26° 34′ S.; *Long.*, 152° 59′ E.

Geological Note: The town is close to the junction of the Walloon Series (Trias-Jura) with the Gympie Formation (Permo-Carboniferous). On the Blackall Range, to the west, there are massive granite outcrops, covered in places with basalt and trachyte.

Yanga Sub-artesian Bore. *See under* Artesian Bores. No. 421.

Yankee Flat, Yankee Camp, 14 miles N.W.byN. of Clermont. *Min.Ref.* Gold (alluvial), *see* 3281, (reef) 4142; Magnesite, 5949.

Yanko Creek Bore. *See under* Artesian Bores. No. 379.

Yanky Bill's Gully, Coen Goldfield. *Min.Ref.* Gold (alluvial), *see* 3208.

Yappar Co. Burke Dist. *See map*, Pl. 20.

Yard (Lobb's) Bore. *See under* Artesian Bores. No. 179.

Yarmouth Lease Bores. *See under* Artesian Bores. No. 448.

Yarra Yarra Bore. *See under* Artesian Bores. No. 364.

Yarrabil Creek, 6 miles N.N.W. of Mt. Shamrock. *Min.Ref.* Copper Pyrites, *see* 2123A; Gold, 3575-3581; Iron Pyrites, 4976-4982.

Yarraden Mg. Centre, Hamilton Goldfield. *Includes* Golden King, Gold Mount, Lukin King, and Savannah Reefs. *Min.Ref.* Gold, *see* 3710A-3712; Graphite, 4591.

Yarraman Bore. *See under* Artesian Bores. No. 221.

—— Cr., S. of Einasleigh Rail. Stn. *Min.Ref.* Gold (alluvial), *see* 3237B.

—— ——, Seven-mile Diggings. *Min.Ref.* Gold (alluvial), *see* 3368; Iron Pyrites, 5338.

Yarramanbar Bore. *See under* Artesian Bores. No. 211.

Yarrandine Bore. *See under* Artesian Bores. No. 401.

Yarrawonga Sub-artesian Bore. *See under* Artesian Bores. No. 449.

Yarrol Co. Burnett and Wide Bay Districts. *See map,* Pl. 4.

—— Station, 25 miles N.W. of Mt. Perry. *Min.Ref.* Anglesite, *see* 14; Galena, 2737; Silver, 7446.

Yarron Vale Bore. *See under* Artesian Bores. No. 450.

Yarrowmere Lease Bore. *See under* Artesian Bores. No. 451.

Yates's Tin Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 816.

Yateman's Tin Claim, Annan R. Tinfield. *Min.Ref.* Cassiterite, *see* 788.

Yatton Goldfield—

SITUATION: *See maps,* Pls. 10, 11. The field is about 21 miles S.W.byW. of St. Lawrence. *Co.* Killarney; *Dist.* Leichhardt. Centre—about *Lat.*, 22° 23′ S.; *Long.*, 149° 18′ E.

DISCOVERY: Gold was discovered here not later than 1877, both in alluvial deposits and in reefs.

POPULATION: Under 20.

PROCLAMATION OF FIELD: First (and only one) gazetted, 12th May, 1887, as follows:—Commencing on the right bank of Lotus Creek at a point twenty chains below a tree marked broad-arrow over L over VI in a triangle, and bounded thence by a north line two miles twenty-eight chains; thence by a west line to Lotus Creek; thence by the right bank of that creek upwards to a point twenty-six chains above a tree marked broad-arrow over L over XII in triangle; thence by a south line crossing the creek three miles thirty-six chains; thence by an east line forty chains; thence by a south line five miles; thence by an east line four miles forty chains to a point south of starting point; and thence by a north line seven miles fifty-two chains to and across Lotus Creek to the point of commencement.

AREA: 31,360 acres (49 sq. miles).

MINERAL STATISTICS: Gold, *included in* "Other Goldfields" *in stat. tables and diagram,* Pls. 36, 46, 46A, 47.

MINERAL REFERENCES: Gold, *see* 4174-4180; Copper (Chalcanthite), 1336, (Copper Pyrites) 2270; Iron (Hematite), 4770, (Iron Pyrites) 5328, (Ironstone) 5599, (Siderite) 7417, 7418. Other Minerals: Calcite, 512-516; Felspar, 2645; Orthoclase, 7049; Steatite, 7693.

GEOLOGICAL NOTE: Diorite is the principal rock of the Yatton Goldfield, Felsite also occurring as intrusive masses. Some of the reefs are of the usual quartz type, others being made up of brecciated fragments of diorite, mixed with calcite and formation rock. *See* G.S.Q. Pub. 92, p. 111 for details.

GEOLOGICAL PUBLICATIONS: Reports Nos. 39 (1887), 48 (1888), 92 (1892). *See under* Geol. Surv. Pub. List for titles.

WARDEN: Stationed at St. Lawrence. INSPECTOR OF MINES: Stationed at Rockhampton.

Yeerongpilly (Par. of) (Pors. 58, 192, 266, 393), 4 miles S. of Brisbane. *Min.Ref.* Coal, *see* 1775-1777; Gold, 4222.

Yellarbon Bore. *See under* Artesian Bores. No. 274.

Yellow Ground, Black Ridge, Clermont. *Min.Ref.* Gold (alluvial), *see* 3318.

—— Nell Mine, Kyabra Opal Field. *Min.Ref.* Precious Opal, *see* 6948B.

Yellow Ochre. *Var. of* Limonite, *which see. See also* Massicot.

—— Waterholes, Clermont Goldfield. *Min.Ref.* Beryl, *see* 295.

—— Wood Bore. *See under* Artesian Bores. No. 207.

Yeppen Lagoon, Rockhampton. *See* Water Analyses (table of), No. 454.

Yeppoon, 34 miles (by rail) N.E. of Rockhampton. *Lat.*, 23° 9′ S.; *Long.*, 150° 51′ E. *Min.Ref.* Apatite, *see* 82.

GEOLOGICAL NOTE: The rocks on the three headlands. Bluff Rock, Bluff Point, and Creek Rock, are made up of trachytic lavas, the form and structure of the masses indicating that they are the necks of old volcanic cones. In the surrounding country there are outcrops of quartzites, shales, etc., belonging to the Devonian System.

Yerounghoola Run Opal Mines. *See* Kyabra Opal Field.

Yeulba Stn. *See* Canmaroo Stn. *Min.Ref.* Precious Opal, *see* 6950.

Yodda Valley Goldfield, Brit. New Guinea. *Min.Ref.* Gold (alluvial), *see* 3434

Yongga Bay, Rossel Is., Brit. New Guinea. *Min.Ref.* Gold, *see* 4555.

York Co. Cook Dist. *See map*, Pl. 8.

—— Peninsula. *See* Cape York Peninsula.

Yorkey's Hill, Marodian Goldfield. *Min.Ref.* Gold (alluvial), *see* 3408.

Yorkey's Prov. Goldfield—

SITUATION: *See maps*, Pls. 4, 5. The field is about 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox; *Dist.* Wide Bay. Centre—about *Lat.*, 25° 27′ S.; *Long.*, 15° 17′ E

DISCOVERY: 1892.

POPULATION: Under 20.

MINERAL STATISTICS: *Included in* Other Goldfields.

MINERAL REFERENCES: Gold, *see* 4409-4414; Lead (Galena), 3078, 3079; Copper (Copper Pyrites), 2330, (Tenorite) 7745; Scheelite, 7358; Antimony (Cervantite), 1310, (Stibnite) 7655, 7656; Zinc (Calamine), 445, (Zinc Blende) 8212, 8213; Iron (Copperas), 2338, (Hematite) 4806-4808, (Iron Pyrites) 5452-5456; Graphite, 4606. Other Minerals: Actinolite, 4870; Calcite, 557, 558; Epidote, 2609, 2610; Garnet, 3148, 3149; Magnesite, 5964.

GEOLOGICAL NOTE: Diorite is the principal rock on the goldfield, but slate and granite are also present. Reefs occur in both slate and diorite, but only in the latter have they proved payable to work. *See* G.S.Q. Pub. No. 179 for details.

GEOLOGICAL PUBLICATIONS: Report No. 179 (1902). *See under* Geol. Surv. Pub. List for title.

WARDEN and INSPECTOR OF MINES: Both stationed at Gympie.

Yorkey's Surprise G.M. Lease (Surprise-Zealandia Reef), Yorkey's Goldfield. *Min.Ref.* Actinolite, *see* 4870; Cervantite, 1310; Epidote, 2610; Garnet, 3149; Gold, 4414; Hematite, 4808; Iron Pyrites, 5456; Stibnite, 7656.

Yorkshire Downs Bore. *See under* Artesian Bores. No. 452.

—— East Reef, Gaeta Goldfield. *Min.Ref.* Gold, *see* 3574A; Iron Pyrites, 4975A.

You-Never-Can-Tell (or Wheel of Fortune) Reef, Hodgkinson Goldfield. *Min.Ref.* Gold, *see* 3761.

Young Australian Mine, Por. 53v, Woowoonga. *Min.Ref.* Gold, *see* 3623; Iron Pyrites, 5006.

—— Almanac Tunnel, Coolgarra. *Min.Ref.* Cassiterite, *see* 1058.

—— American Tin Mine, Herberton. *Min.Ref.* Cassiterite, *see* 1131; Molybdenite, 6857; Wolfram, 8029.

—— Britannia Mine, Canoona Goldfield. *Min.Ref.* Gold, *see* 4315, 4315B; Iron Pyrites, 5398B.

—— Wexford Mine, Etheridge Goldfield. *Min.Ref.* Galena, *see* 2756; Gold, 3732A; Iron Pyrites, 5052; Tenorite, 7719.

Younggrove Bore. *See under* Artesian Bores. No. 157.

Youranigh Co. Mitchell Dist. *See map*, Pl. 18.

Yowah Lease Bore. *See under* Artesian Bores. No. 453.

Yowah Opal Field, Cunnamulla Mineral Field. Centre—about *Lat.* 27° 59′ S.; *Long.* 144° 24′ E. *Includes* Great Extended, Old Flat, and Southern Cross Opal Mines, *which see*. *Min.Ref.* Precious Opal, *see* 6936C, 6963-6965.

GEOLOGICAL NOTE: The rock consists of "Desert Sandstone" (Upper Cretaceous) lying conformably on the "Rolling Downs" Formation (Lower Cretaceous). The opal occurs at the base of a pink sandstone ("Desert Sandstone"), the matrix being concretionary nodules or "kernels." *See* G.S.Q. Pub. No. 177 for details.

Yttrium (Y.). *Atom.Wt.* = 89·0. *Sp.gr.* Y_2O_3 = 5·046. *See* Monazite. of which it is a minor chemical constituent.

Yuleemza Leases Bores. *See under* Artesian Bores. No. 177.

Zara Sel. Bore. *See under* Artesian Bores. No. 197.

Zealandia Mine, Yorkey's Goldfield. *Min.Ref.* Cervantite, *see* 1310; Gold, 4414; Iron Pyrites, 5456; Stibnite, 7656.

Zelma Mine, Grasstree Goldfield. *Min.Ref.* Gold, *see* 4116.

Zeolites. *See* Analcime, Apophyllite, Chabazite, Harmotome, Laumonite, Mesolite, Natrolite, Scolecite, Thomsonite.

Zillmanton (Chillagoe Rail. line). *See maps*, Pls. 8, 9, 22. *Lat.*, 17° 13′ S.; *Long.*, 144° 28′ E. *Min.Ref.* Copper carbonate, *see* 1897; Hematite, 4720; Tenorite, 7724.

—— to George Creek. *Min.Ref.* Limestone, *see* 632.

Zinc (Zn). *Atom.Wt.* = 65·37. *Sp.gr.* = 6·9 to 7·2. *Colour*, bluish-white-metallic. *Note.*—Zinc is somewhat malleable, this property being more pronounced when the metal is heated. Its chief application is in the galvanising of iron, but it is also used in the manufacture of process engravings, and in electrical batteries. With copper it forms many important alloys, such as brass, Muntz metal, and bell metal. Its principal compounds are the oxide and sulphate, both of which are used in medicine, the former also being used as a pigment, the latter in dyeing and calico printing.

MINERALS: *See* Aurichalcite, Calamine, Goslarite, Smithsonite, Willemite, Zinc Blende.

MINERAL AND GEOLOGICAL NOTE: Commonly associated with ores of antimony, bismuth, copper, gold, iron, lead, and silver; also with Wolfram, Molybdenite, Mispickel, Cadmium Blende, Manganese, Garnet, Gypsum, and Barytes. Common gangue minerals include Calcite, Chlorite, Felspar, Fluorspar, and Quartz, while the country rocks are usually one or more of the following:—greisen, granite, slate, greywacke, altered volcanic tuff, quartzite, quartz porphyry, garnet rock, limestone, schist, diorite, and serpentine. Many large deposits of zinc blende are known in the State, some of which are now undergoing development.

STATISTICAL NOTE: There are no returns of zinc, as all deposits have been worked in conjunction with other metals, and the zinc has not been saved as a by-product.

VALUES OF SPELTER: *See* Table under Metal Values in London for maximum and minimum prices for all years since 1892.

Zinc Blende. *Syn.* Sphalerite, Black Jack. *Compo.*, Sulphide of zinc. *Colour*, usually brownish-black. *Streak*, reddish-brown. *Lustre*, resinous to adamantine. *H.* = 3·5-4. *Sp.gr.* = 3·9-4·1. *Contents* (*max.*), Zinc 67 per cent.

8050. ——. *Assoc.with* Galena, Iron Pyrites, Copper Pyrites, and Cassiterite, in chloritic quartz and greisen. *Loc.* Brilliant P.C. Tin Mine, Stanhills Tinfields, 18 to 24 miles S.E. of Croydon. *Co.* Esmeralda; *Dist.* **Burke.** *Ref.* G.S.Q. Pub. 211, p. 6 (1907).

8051. ——. *Assoc.with* Galena, Cassiterite, Copper Pyrites, Azurite, and Malachite, in chlorite. *Loc.* Comet Mines, N. of Ten-mile Cr., nr. Esmeralda Rd., Stanhills Tinfield (*ante*). *Ref.* G.S.Q. Pub. 211, p. 9 (1907).

8052. ——. *Assoc.with* Galena and Cerussite, in lode. *Loc.* Mended Hill Mine, Lawn Hills, 92 miles S.W. of Burke. *Co.* Gregory; *Dist.* Burke. *Yield:* Silver = 29 to 34 oz. per ton; Lead = 69 to 76 per cent. *Ref.* G.S.Q. Pubs. 138, p. 2 (1900), 232, p. 45 (1911).

8053. ——. *Assoc.with* Lead, Gossan, and Calcite, in lodes in sandstone. *Loc.* Watson's Mine, Lawn Hills (*ante*). *Ref.* G.S.Q. Pubs. 138, p. 3 (1900), 232, p. 50 (1911).

8054. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Calcite. *Loc.* Golden Gate Reef, 4 miles N.W. of Croydon Rail. Stn., Croydon Goldfield. *Co.* Surrey; *Dist.* Burke. *Ref.* G.S.Q. Pub. 202, p. 15 (1905).

8055. ——. *Assoc.with* Gold, in quartz reef. *Loc.* Ironclad Mine, 4¼ miles N.E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.M.

8056. ——. *Assoc.with* Gold, Galena, and Iron Pyrites, in quartz reef. *Loc.* La Reine d'Or Lease ((554), 1 mile N. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 16 (1896).

8057. ——. *Assoc.with* Gold, Iron Pyrites, and Limonite, in quartz. *Loc.* Post Hole Reef, Croydon Township, Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 35, p. 8 (1889), 118, p. 21 (1896).

8058. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* St. Patrick Reef, 35 chains N.N.E. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1889).

8059. ——. *Assoc.with* Gold, in quartz. *Loc.* Waterfall Reef, 4½ miles N.E.byN. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 35, p. 10 (1889).

8060. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* C. D. Roe Reef, Flannagan's, 12 miles E.byS. of Croydon Rail. Stn., Croydon Goldfield (*ante*). *Ref.* G.S.Q. Pub. 118, p. 47 (1896).

8061. ——. In small quantities, in nearly all the reefs in the felsite country. *Loc.* Croydon Goldfield, 94 miles (by rail) S.E. of Normanton. *Co.* Surrey; *Dist.* Burke. *Ref.* B.D.

8062. ——. *Assoc.with* Gold, Copper Pyrites, Cuprite, Chalcotrichite, Tile Ore, Iron Pyrites, and Calcite. *Loc.* Mt. Perry Mine, 67 miles (by rail) S.W.byW. of Bundaberg. *Co.* Bowen; *Dist.* **Burnett.** *Ref.* G.S.M.

8063. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Galena, in quartz and barytes. *Loc.* Potosi Copper Lode, 3 miles W. of Mungai, 6 miles W.N.W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 12 (1885), and G.S.M.

8064. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Mispickel, in quartz. *Loc.* California Reef, Reid's Cr. Goldfield, 4½ miles S.W. of Mt. Perry Rail. Stn. *Co.* Bowen (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885), and G.S.M.

8065. ——. *Assoc.with* Gold, Mispickel, Iron Pyrites, and Galena, in quartz and felspar *Loc.* Reefs, Reid's Cr. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 21, p. 11 (1885).

8066. ——. *Assoc.with* Iron Pyrites, and Galena, with traces of gold and silver. *Loc.* Gt. Southern Mine, Mt. Biggenden, 4½ miles W. of Biggenden Rail. Stn., 58 miles (by rail and road) W. of Maryborough. *Co.* Cook; *Dist.* Burnett. *Ref.* O.R.

8067. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, and Galena, in lode. *Loc.* Allendale Silver Lode, 1½ mile up Chowey Cr., 6 miles N.W. of Chowey Rail. Stn., 68 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Assay: See* No. 3567. *Ref.* G.S.Q. Pub. 25, p. 3 (1886).

8068. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Cuprite, Tenorite, Iron Pyrites, Malachite, Mispickel, Hematite, Bismuthinite, Pyrrhotite, and Calcite. *Loc.* Commonwealth Mine, nr. Mt. Havilah, 2¾ miles S.S.W. of Degilbo (Gayndah line). *Co.* Cook (*ante*). *Assay:* Copper = 3·5, Bismuth = 1·1, and Zinc = 0·30 per cent.; Silver = 6 oz. 13 dwt. 8 gr., Gold = 16 gr. per ton. *Ref.* G.S.Q. Pubs. 185, p. 8 (1903), and 207, pp. 14-19 (1907).

8069. ——. *Assoc.with* Gold, Telluride of Gold, Copper Pyrites, Malachite, Native Bismuth, Bismuthinite, Joseite, Molybdenite, Mispickel, and Calcite. *Loc.* Mt. Shamrock Mine, Mt. Shamrock, 5½ miles W.N.W. of Degilbo Rail. Stn. (Gayndah line), 63 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pubs. 60, p. 6 (1890); 168, p. 48 (1901); 125 (1897).

8070. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* Paradise P.C., Paradise Goldfield, 8 miles N.W. of Degilbo Rail. Stn. (Gayndah line). *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 68, p. 1 (1891).

8071. ——. *Assoc.with* Gold, Silver, Iron Pyrites, and Galena, in quartz and calcite. *Loc.* Stanton-Harcourt Diggings, Stony Cr., nr. Degilbo Run, 11 miles N. of Degilbo, 69 miles (by rail and road) W. of Maryborough. *Co.* Cook (*ante*). *Ref.* G.S.Q. Pub. 25, p. 4 (1886).

8071A. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, and Calcite, in ironstone lode. *Loc.* Ban Ban Stn., 12 miles S.E.byE. of Gayndah Rail. Stn. *Co.* Mackenzie; *Dist.* Burnett. *Ref.* A.R., p. 179 (1909).

8071B. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Galena. *Loc.* Ban Ban Zinc Lode, 20 miles S. of Biggenden, on W. side of Ban Ban Range. *Co.* Mackenzie (*ante*). *Assay:* Zinc = 11·4 per cent., Silver = 8 dwt. per ton, Gold = trace. *Ref.* A.R.D.M., p. 189 (1910), and A.R., 179 (1909).

8072. ——. *Assoc.with* Gold, Anglesite, Redruthite, and Iron Pyrites, in quartz. *Loc.* Augusta, Maid of Erin Shaft, in Victory United Lease (33), Eidsvold Goldfield, 35 miles N.W. of Gayndah Rail. Stn. *Co.* Yarrol; *Dist.* Burnett. *Ref.* G.S.Q. Pub. 102, p. 3 (1895).

8073. ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel, in quartz. *Loc.* Mt. Rose P.C., Mt. Rose Reef, Eidsvold Goldfield (*ante*). *Ref.* G.S.M.

8074. ——. *Assoc.with* Gold and Iron Pyrites, in quartz and calcite. *Loc.* Mt. Rose 1 West Lease (41), Eidsvold Goldfield (*ante*). *Ref.* G.S.Q. Pub. 102, p. 2 (1895).

8075. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, Copper Pyrites, Redruthite, and Galena, in quartz reef. *Loc.* Nil Desperandum Mine, Charleston, 140 miles S.W. of Almaden (Chillagoe Rail. line), Etheridge Goldfield. *Co.* Gilbert; *Dist.* **Cook.** *Ref.* G.S.Q. Pubs. 35, p. 6 (1887), and 151, p. 11 (1900).

8076. ——. *Assoc.with* Gold, Iron Pyrites, Pyrrhotite, and Galena, in quartz. *Loc.* Queenslander Mine, Charleston (*ante*). *Ref.* O.R., and G.S.Q. Pub. 219, p. 13 (1909).

8077. —— *Assoc.with* Gold, Iron Pyrites, Galena, Copper Pyrites, and Mispickel, in quartz. *Loc.* Papa Reef, ½-mile N.E. of Georgetown, Etheridge Goldfield. *Co.* Gilbert (*ante*). *Ref.* G.S.Q. Pub. 35, p. 3 (1887).

8078. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Copper Pyrites, in quartz. *Loc.* International Reef, Rocky, Sandy Cr., 7 miles S.W.byS. of Georgetown, Etheridge Goldfield (*ante*). *Ref.* G.S.Q. Pubs. 151, p. 10 (1900), and 219, p. 9 (1909).

8079. ——. *Assoc.with* Gold and Iron Pyrites. *Loc.* Spero Meliora Reef, Sandy Cr. (*ante*). *Ref.* G.S.Q. Pub. 35, p. 4 (1887).

8080. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Mispickel. *Loc.* Union Reef, 3½ miles N.W.byN. of Woodville, 13 miles N.W. of Thornborough, Hodgkinson Goldfield. *Co.* Hodgkinson; *Dist.* Cook. *Ref.* G.S.Q. Pub. 16, p. 24 (1884), and P.R.S.Q., vol. 4, p. 47 (1887).

8081. ——*Assoc.with* Cassiterite, Copper Pyrites, and Mispickel, in quartz. *Loc.* Consolidated Tin Mine, 4½ miles N.E. of Montalbion, 11 miles (by rail and road) S.W. of Stannary Hills Rail. Stn., **Walsh and Tinaroo Mineral Fields.** *Co.* Hodgkinson (*ante*). *Ref.* G.S.M.

8081A. ——. *Assoc.with* Galena and Anglesite. *Loc.* Borossa Lease, Silverfield, 1 mile S. of Montalbion, 8 miles S.W. of Stannary Hills Rail. Stn. (Chillagoe Br. line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M., and G.S.Q. Pub. 119, p. 32 (1897).

8082. Zinc Blende. *Assoc.with* Silver, Copper Pyrites, Iron Pyrites, Mispickel, and Galena. *Loc.* Tornado Mine, Silverfield (*ante*). *Assay: See* No. 2155. *Ref.* P.R.S.Q., vol. 4, pp. 48, 152 (1887).

8083. ——. *Assoc.with* Galena and Iron Pyrites, in lode. *Loc.* Victoria Amalgamated Mine, Silverfield (*ante*). *Ref.* G.S.Q. Pub. 119, p. 32 (1893).

8084. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Galena, and Molybdenite. *Loc.* Bamford Wolfram Mines, 3 miles N.N.W. of Petford Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* A.R., p. 101 (1901).

8085. ——. *Assoc.with* Copper Pyrites, Galena, and Mispickel. *Loc.* Boomerang Mine, Calcifer, 132 miles (by rail) W.S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.M.

8086. ——. *Assoc.with* Galena, Tetrahedrite, and Malachite. *Loc.* Eclipse Mine, Muldiva, 7 miles W.S.W. of Almaden Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 69, p. 9 (1891).

8087. ——. *Assoc.with* Silver, in calcite. *Loc.* Paisley Mine, Muldiva (*ante*). *Ref.* G.S.Q. Pub. 119, p. 35 (1897).

8088. ——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, Malachite, Galena, Cerussite, Minium, Garnet, and Hematite, in gossan. *Loc.* Penzance Mine, Redcap Cr., 3 miles N.E. of Mungana Rail. Stn. (Chillagoe line), Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pubs. 69, p. 6 (1891), and 134, p. 11 (1898).

8089. ——. *Assoc.with* Gold, Iron Pyrites, and Stibnite, in quartz reef. *Loc.* Queen Constance 5 North Mine, Mareeba Goldfield, Tinaroo Cr., 5 miles S.E. of Mareeba Rail. Stn., Walsh and Tinaroo Mineral Fields. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.Q. Pub. 97, p. 6 (1894).

8089A. ——. *Assoc.with* Galena, Massicot, Cerussite, Iron Pyrites, and Mispickel, in lode. *Loc.* Chillagoe Mine, off Wise's Nob, Oaks Goldfield, 30 miles (by road) S. of Einasleigh Rail. Stn. (Etheridge line). *Co.* Percy; *Dist.* Cook. *Ref.* A.R., p. 187 (1909).

8090. ——. *Assoc.with* Galena, in quartz. *Loc.* Fossilbrook, 28 miles S.S.W. of Almaden (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields. *Co.* Tate; *Dist.* Cook

——. *See* other Walsh and Tinaroo References, No. 8107, etc.

8091. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* Cornucopia Claim, Horn Is. Goldfield, 3 miles E. of Thursday Island, Torres Strait. *Co.* Torres; *Dist.* Cook. *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

8092. ——. *Assoc.with* Gold, Galena, Iron Pyrites, and Copper Pyrites, in quartz reef. *Loc.* Eclipse Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 6 (1896), and G.S.M.

8093. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* Pioneer Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 5 (1896).

8094. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef in granite. *Loc.* Triumph Mine, Horn Is. Goldfield (*ante*). *Ref.* G.S.Q. Pub. 112, p. 4 (1896).

8095. ——. *Assoc.with* Galena, Copper Pyrites, and Mispickel, in chloritic rock. *Loc.* Doctor's Lode, Sel. 39, Jibbinbar, 20½ miles S.W.byW. of Stanthorpe. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

8096. ——. *Assoc.with* Silver, Galena, Iron Pyrites, and Mispickel, in quartz reef. *Loc.* Jibbinbar Silver Mine, Jibbinbar (*ante*). *Ref.* G.S.Q. Pub. 125, p. 29 (1897).

8097. ——. *Assoc.with* Gold, Silver, and Mispickel, in quartz in granite. *Loc.* Steele's Sel. (31), Jibbinbar (*ante*). *Assay: See* No. 3833A. *Ref.* G.S.Q. Pub. 67, p. 2 (1890).

8098. ——. *Assoc.with* Iron Pyrites, Copper Pyrites, Azurite, Malachite, Mispickel, and Cassiterite, in quartz, greisen, and slate. *Loc.* Ballandean Tin Mine, Severn R., 14 miles (by rail) S. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.M., B.D., and L.C.B.

8099. ——. *Assoc.with* Iron Pyrites, Galena, and Mispickel. *Loc.* Ballandean Tin Mine, Severn R. (*ante*). *Ref.* G.S.Q. Pub. 125, p. 30 (1897).

8100. ——. *Assoc.with* Copper Pyrites, Cassiterite, and Galena, in chlorite, quartz, and fluorspar. *Loc.* Severn R., 7 miles W. of Ballandean, 21 miles (by rail and road) S.S.W. of Stanthorpe. *Co.* Bentinck (*ante*).

8101. ——. *Assoc.with* Iron Pyrites, Galena, Copper Pyrites, and Mispickel, in lode. *Loc.* Silver Queen Silver Mine, Severn R., 6 miles W. of Ballandean, 20 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay: See* No. 2834. *Ref.* G.S.Q. Pub. 191, pp. 24, 39 (1904).

8102. ——. *Assoc.with* Iron Pyrites, Mispickel, Scorodite, Cassiterite, Hornblende, etc., in slate. *Loc.* Beacroft's Workings, Sundown Cr., 12 miles S.W.byW. of Ballandean, 26 miles (by rail and road) S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 191, p. 23 (1904).

8103. ——. *Assoc.with* Copper Pyrites, Cuprite, Azurite, Malachite, in quartz. *Loc.* Sel. 24, near Sundown Cr., 11 miles W.S.W. of Ballandean, 25 miles (by rail and road) S.W. of Stanthorpe (*ante*). *Ref.* G.S.Q. Pub. 67, p. 1 (1890).

8104. ——. *Assoc.with* Copper Pyrites, Cassiterite, Wolfram, Mispickel, Calcite, Chlorite, and Orthoclase, in quartz lode. *Loc.* Sundown Copper Mine, Sundown Cr., trib. of Severn R., 26 miles S.W. of Stanthorpe. *Co.* Bentinck (*ante*). *Assay: See* No. 2192. *Ref.* G.S.Q. Pub. 191, p. 22 (1904), and G.S.M. and B.D.

8105. ——. *Assoc.with* Copper Pyrites, Redruthite, Copper carbonate, Galena, Manganese-dioxide, and Ironstone, in lode. *Loc* Pikedale Silver Mine, Woolshed Gully, 20 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 87 (1898).

8106. ——. *Assoc.with* Gold, Pyrargyrite, Iron Pyrites, Galena, Cerussite, Cuprite, Tile Ore, Copper Pyrites, Malachite, Azurite, Smithsonite, Ironstone, and Calcite, in lode. *Loc.* Silver Spur Mine, 8 miles E. of Texas, 43 miles W.S.W. of Stanthorpe. *Co* Clive; *Dist.* Darling Downs. *Ref.* G.S.Q. Pubs. 120 (1898), 191 (1904).

8106A.——. *Assoc.with* Silver, Galena, and Copper Pyrites, in lode. *Loc.* Claim on Lucky Valley Goldfield, 12 miles S.S.E. of Warwick. *Co.* Merivale; *Dist.* Darling Downs. *Ref.* A.R., p. 223 (1910).

8107. ——. *Assoc.with* Galena and Bismuthinite. *Loc.* Great Britain Mine, Coolgarra, 9 miles N.N.E. of Mt. Garnet Rail. Stn., **Walsh and Tinaroo Mineral Fields.** *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* G.S.M.

8108. ——. *Assoc.with* Galena and Mispickel. *Loc.* Koh-i-noor Mine, Coolgarra (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 48 (1887).

8109. ——. *Assoc.with* Galena and Iron Pyrites. *Loc.* P.C., Dry R., br. of Wild R., 12 miles S.S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

8110. ——. *Assoc.with* Copper Pyrites, Marcasite, and Galena, in quartz. *Loc.* Tryno-more Silver Mine, Dry R. (*ante*). *Ref.* G.S.Q. Pub. 13, p. 31 (1883).

8111. ——. *Assoc.with* Gold, Silver, Copper Pyrites, Bornite, Cuprite, Tenorite, Azurite, Malachite, Chalcanthite, Iron Pyrites, Mispickel, Hematite, Magnetite, Cerussite, and Minium, in quartz lodes in quartzite and porphyry. *Loc.* Mt. Garnet Mine, Return Cr., Wild R., 136 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 134, pp. 16-19 (1898).

8112. ——. *Assoc.with* Calamine. *Loc.* Lancelot Tin Mines, Newelton (Silver Valley), 9 miles S.W. of Herberton, Walsh and Tinaroo Mineral Fields. *Co.* Cardwell (*ante*).

8113. ——. *Assoc.with* Galena, Cerussite, Iron Pyrites, Copper Pyrites, etc., in slate and volcanic tuffs. *Loc.* Lancelot Tin Mine, Newelton (*ante*). *Ref.* L.B. 1, p. 479 (1883).

8114. ——. *Assoc.with* Cassiterite and Copper Pyrites. *Loc.* Smith's Cr. Proprietary Tin Mines, Nymbool, 28 miles (by rail) S.E.byS. of Lappa Junction (Mt. Garnet-Chillagoe line), 130 miles (by rail) S.W. of Cairns, Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* G.S.Q. Pub. 192, p. 29 (1904).

8115. ——. Woodleigh, Herbert R., 11 miles E. of Mt. Garnet Rail. Stn., Walsh and Tinaroo Mineral Fields (*ante*). *Ref.* P.R.S.Q., vol. 15, p. 53 (1900).

——. *See* other Walsh and Tinaroo References, No. 8081, etc.

8116. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz reef. *Loc.* Alexandra Hill G.M. Co.'s Mine, **Charters Towers** Goldfield, 82 miles S.W.byS. of Townsville, Gt. Northern Rail. *Co.* Davenport; *Dist.* Kennedy North. *Ref.* P.R.S.Q., vol. 4, p. 48 (1887).

Zinc Blende. In the following Charters Towers references (Nos. 8117-8134) the zinc occurs only in small quantities.

8117. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Blue Peter Lease No. 1 E., Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

8118. ——. *Assoc.with* Gold, Iron Pyrites, and Chlorite, in quartz reef. *Loc.* Bryan o' Lynn Mine, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, pp. 36, 49 (1887).

8119. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Galena, in quartz and calcite. *Loc.* Carrington Lion 1 and 2 E. Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

8120. ——. *Assoc.with* Gold, Galena, Copper Pyrites, Iron Pyrites, and Barytes, in quartz and calcite. *Loc.* Carrington's United Mines Tin Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T. and G.S.M.

8121. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, and Copper carbonate, in quartz. *Loc.* Comstock (Stockholm) Reef, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 48 (1887).

8122. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* Day Dawn P.C., Charters Towers Goldfield (*ante*). Mineral percentages: Iron Pyrites = 57·9, Galena = 11·5, Zinc Blende = 8·6, Silica = 22 per cent. *Assay:* Gold = 10 oz. per ton. *Ref.* A.R. D.M., p. 33 (1894).

8123. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* Day Dawn 3A West Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

8124. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Hope Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

8125. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Mills Day Dawn United G.M. Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

8126. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* New Towers Extd. Mine, Charters Towers Goldfield (*ante*). Mineral percentages and gold yield, *see* No. 2899. *Ref.* A.R.D.M., p. 33 (1894).

8127. ——. *Assoc.with* Gold, Iron Pyrites, and Barytes, in quartz reef. *Loc.* Old Identity Mine, Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 36 (1887), and G.S.M.

8128. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Old Imperial Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

8129. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Pfeiffer's Day Dawn Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

8130. ——. *Assoc.with* Gold, Galena, and Iron Pyrites, in quartz. *Loc.* Queen Deep Mines Lease, Charters Towers Goldfield (*ante*). *Ref.* W.C.T.

8131. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Calcite, Gypsum, and Chlorite, in quartz. *Loc.* Queen Reef, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 26 (1879); P.R.S.Q., vol. 4, pp. 36, 47 (1887); G.S.M., and W.C.T.

8132. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* St. Patrick Block, Charters Towers Goldfield (*ante*). *Ref.* G.S.Q. Pub. 1, p. 28 (1879).

8133. ——. *Assoc.with* Gold, Galena, and Iron Pyrites, in quartz reef. *Loc.* Sunburst P.C., Charters Towers Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

8134. ——. Union Jack Mine, Charters Towers Goldfield (*ante*). *Ref.* G.S.M.

8135. ——. *Assoc.with* Gold and Iron Pyrites, in quartz reef. *Loc.* Mt. Elliott, 20 miles S.E.byS. of Townsville. *Co.* Elphinstone; *Dist.* Kennedy North. *Ref.* G.S.M.

8136. ——. *Assoc.with* Gold, Iron Pyrites, and Limonite, in quartz and calcite. *Loc.* Golden Valley Reef, Mt. Success, 15 miles N.N.W. of Ravenswood Junction. *Co.* Elphinstone (*ante*). *Ref.* G.S.Q. Pub. 133, p. 10 (1898), and G.S.M.

8137. ——. *Assoc.with* Gold and Iron Pyrites, in quartz. *Loc.* Mt. Success Reef, Mt. Success (*ante*). *Ref.* G.S.Q. Pub. 133, p. 9 (1898), and G.S.M.

8138. ——. *Assoc.with* Calcite. *Loc.* Black Jack Mine, ¼-mile N.E of Ravenswood Rail. Stn., **Ravenswood Goldfield.** *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.M.

8139. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Tenorite, Malachite, and Mispickel, in quartz. *Loc.* Buck Reef, 1 mile S.E. of Ravenswood, Ravenswood Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 76 (1887).

8140. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz. *Loc.* Crescent G.M. Lease, New Moon Reef, Ravenswood, 78 miles (by rail) S. of Townsville. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* W.C.T.

8141. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz reef. *Loc.* New England 1 South Mine, ¼-mile N.W. of Ravenswood (*ante*). *Mineral percentages* and *Assay: See* No. 5246. *Ref.* A.R.D.M., p. 34 (1894).

8142. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* New England Reef, Elphinstone Cr., ¼-mile N.W. of Ravenswood (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1900).

8143. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Mispickel, in quartz. *Loc.* Shellmalier Reef, Elphinstone Cr., 30 chains N.N.E. of Ravenswood (*ante*). *Ref.* G.S.Q. Pub. 152, p. 8 (1900).

8144. ——. *Assoc.with* Gold and Copper Pyrites, in quartz reef. *Loc.* Wild Irish Girl Mine, Elphinstone Cr., 22 chains N.W. of Ravenswood Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1900).

8145. ——. *Assoc.with* Gold, Galena, and Copper Pyrites, in quartz. *Loc.* Sunset Reef, ½-mile S. of Ravenswood Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 152, p. 7 (1900).

8146. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Galena, in quartz. *Loc.* Sunset and General Grant Reef, ½-mile S. of Ravenswood Rail. Stn. (*ante*). *Ref.* G.S.Q. Pub. 183, pp. 2-6 (1903).

8147. ——. *Assoc.with* Gold and Galena, in quartz and Calcite. *Loc.* Donnybrook Reef, 6½ miles S. of Ravenswood Rail. Stn., Ravenswood Goldfield. *Co.* Gladstone; *Dist.* Kennedy North. *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

8148. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Galena, in quartz. *Loc.* Cousin Jack Reef, Sandy Cr., 2½ miles E.S.E. of Ravenswood Rail. Stn., Ravenswood Goldfield (*ante*). *Ref.* G.S.Q. Pub. 152, p. 9 (1900).

8149. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* John Bull Block, Sandy Cr., 3 miles E.S.E. of Ravenswood Rail. Stn. (*ante*). *Ref.* G.S.M.

8150. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Galena, in quartz and steatite. *Loc.* Politician Claim, Sandy Cr., 2¾ miles E.S.E. of Ravenswood Rail. Stn. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 48 (1887).

8151. ——. *Assoc.with* Galena. *Loc.* Bonnie Dundee Mine, 1 mile N. of Ravenswood Rail. Stn. (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 48 (1887).

8152. ——. *Assoc.with* Silver, Galena, Iron Pyrites, Stibnite, and Copper Pyrites. *Loc.* King's Silver Lode, 1 mile N. of Ravenswood Rail. Stn. (*ante*) *Analysis: See* No. 2227. *Ref.* G.S.Q. Pub. 152, p. 11 (1900), and G.S.M.

8153. ——. *Assoc.with* Galena and Stibnite. *Loc.* Hannon's Silver Mine, 1 mile N. of Ravenswood (*ante*). *Ref.* G.S.M.

8154. ——. *Assoc.with* Galena. *Loc.* Pyramid Silver Lease, 1 mile N. of Ravenswood (*ante*). *Assay: See* No. 2935. *Ref.* P.R.S.Q., vol. 4, p. 47 (1887).

8155. ——. *Assoc.with* Cadmium-Blende. *Loc.* Ravenswood Goldfield, 75 miles (by rail) S. of Townsville (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 50 (1887).

8156. ——. *Assoc.with* Copper Pyrites and Iron Pyrites, in leader. *Loc.* Comstock Lease (187), **Kangaroo Hills Mineral Field,** 40 miles S.W.byS. of Ingham. *Co.* Wairuna; *Dist.* Kennedy North. *Assays: See* No. 2244.

8157. ——. *Assoc.with* Native Silver, Galena, Cerussite, Malachite, Mispickel, Chrysocolla, Manganese-dioxide, and Hematite, in lode. *Loc.* Hidden Treasure Lease (165), Kangaroo Hills Mineral Field (*ante*). *Assay: See* 1241. *Ref.* G.S.Q. Pubs. 82, p. 7 (1892), 71, p. 9 (1891).

8158. ——. *Assoc.with* Redruthite and Galena. *Loc.* Macauley Cr. Copper and Silver Lodes (*ante*). *Ref.* G.S.Q. Pub. 167, pp. 9, 10 (1901).

8159. ——. *Assoc.with* Galena, Cerussite, Minium, Chrysocolla, Copper carbonate, and Hematite, in gossan lode. *Loc.* White Wings P.A., Mt. Brown, Kangaroo Hills Mineral Field (*ante*). *Assay: See* No. 2980. *Ref.* G.S.Q. Pub. 82, p. 10 (1892).

8160. ——. *Assoc.with* Native copper, Copper Pyrites, Cuprite, Atacamite, Chrysocolla, Copper carbonate, Linarite, Cerussite, Manganese-dioxide, Smithsonite, Mispickel, Hematite, Ironstone, Fluorspar, and Garnet in lode. *Loc.* Mt. Moss Lease (167), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 3 (1892).

8161. ——. *Assoc.with* Copper Pyrites, Bornite, Cuprite, Tenorite, Copper carbonate, Iron Pyrites, Ironstone, and Galena, in lode. *Loc.* Mt. Thekla Copper and Silver Mine, 4 miles W. of Ewan, Kangaroo Hills Mineral Field (*ante*). *Assay: See* No. 2972. *Ref.* G.S.Q. Pub. 167, p. 7 (1901).

8162. ——. *Assoc.with* Hematite, in quartz. *Loc.* Victory Lease (185), Kangaroo Hills Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 82, p. 8 (1892).

8163. ——. *Assoc.with* Galena, Iron Pyrites, and Stibnite, in lode. *Loc.* Murphy and Godson's Mineral Lease (73), Star R. Mineral Field, 50 miles (by road) N.W. of Ravenswood. *Co.* Wilkie Gray; *Dist.* Kennedy North. *Assay: See* No. 2987. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

8164. ——. *Assoc.with* Galena and Iron Pyrites, in lode. *Loc.* Northbrook (A. Beazley) Selection (179), Star R. Mineral Field (*ante*). *Assays: See* No. 2990. *Ref.* G.S.Q. Pub. 26, p. 8 (1886).

8165. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Cerussite, Anglesite, Minium, and Siderite. Union Silver-Lead Mine, Star R. Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 26, p. 5 (1886), and G.S.M.

8166. ——. *Assoc.with* Gold, Iron Pyrites, and Siderite, in quartz reef. *Loc.* Coral Tree P.C., Bee Cr. Diggings, 48 miles W.S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), 229, p. 29 (1910).

8166A.——. *Assoc.with* Gold, Iron Pyrites, Limonite, Siderite, Copper Pyrites, Malachite, and Galena, in quartz. *Loc.* Highland Mary P.C., Bee Cr. Diggings (*ante*). *Ref.* G.S.Q. Pubs. 54, p. 2 (1889), and 229, p. 30 (1910).

8167. ——. *Assoc.with* Galena, Copper Pyrites, and Malachite, in quartz. *Loc.* Mackay's Mine, Blue Mt., 9 miles S.W. of Eton, 32 miles (by rail and road) W. of Mackay. *Co.* Carlisle; *Dist.* Kennedy South. *Assay: See* No. 3008. *Ref.* G.S.Q. Pub. 53, p. 10 (1889).

8167A.——. *Assoc.with* Galena and Copper Pyrites, in quartz. *Loc.* Ben Mohr M.L. (8), Mt. Spencer Goldfield, 6 miles S.W. of Eton Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 229, p. 19 (1910).

8168. ——. *Assoc.with* Galena, Cerussite, Copper Pyrites, Malachite, Azurite, Iron Pyrites, and Mispickel, in quartz lode. *Loc.* Mt. Barker Silver Mine, 3 miles N.W. of Eungella Stn., 33 miles W. of Mirani, Mackay Rail. line. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 181, pp. 12-17 (1903).

8168A.——. *Assoc.with* Galena and Copper Pyrites, in quartz. Nr. Coolan's P.A., Mt. Wyatt Goldfield, about 60 miles S.S.E. of Ravenswood *Co.* Sellheim; *Dist.* Kennedy South. *Ref.* G.S.M.

8169. ——. *Assoc.with* Galena, Cerussite, and Iron Pyrites, in lode. *Loc.* Bonnie Dundee Mine, Sellheim Mineral Field, 92 miles S.W.byS. of Bowen. *Co.* Sellheim; *Dist.* Kennedy South. *Assays: See* No. 1288. *Ref.* G.S.Q. Pub. 57, p. 6 (1889).

8170. ——. *Assoc.with* Galena, Minium, Cerussite, Copper Pyrites, and Clay, in lode. *Loc.* General Gordon Mine, Sellheim Mineral Field (*ante*). *Ref.* G.S.Q. Pub. 57, p. 6 (1889).

8171. ——. *Assoc.with* Galena, Anglesite, Cerussite, Minium, Iron Pyrites, and Ironstone. *Loc.* Pyramid Silver Mine (Argentine Shaft), Sellheim Mineral Field (*ante*). *Assay: See* 3016. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

8172. ——. *Assoc.with* Silver, Galena, Minium, Cerussite, Iron Pyrites, and Ironstone, in lode. *Loc.* Rob Roy Mine, Sellheim Mineral Field (*ante*). *Assay: See* No. 3017. *Ref.* G.S.Q. Pub. 57, p. 4 (1889).

8173. ——. *Assoc.with* Gold, Silver, Galena, Iron Pyrites, and Mispickel, in siliceous gangue. *Loc.* Monsildale Silver and Lead Mines, 35 miles N.byW. of Esk, 102 miles (by rail and road) N.N.W. of Brisbane. *Co.* Canning; *Dist.* **Moreton.** *Ref.* (and *Assays*) G.S.Q. Pub. 169, pp. 2, 3 (1901).

8173A.——. *Assoc.with* Copper Pyrites, in chloritic slate. *Loc.* Ashington Copper Syndicate, Blackbutt, 71 miles N.W. of Brisbane. *Co.* Cavendish; *Dist.* Moreton. *Ref.* G.S.M.

8174. ——. *Assoc.with* Galena, Iron Pyrites, Copper Pyrites, and Tenorite, in altered sedimentary rocks. *Loc.* Gt. Pyramid Mine (Saxon shaft), Cressbrook, 12 miles N. of Esk, 77 miles (by rail and road) W.N.W. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* G.S.Q. Pub. 169, p. 6 (1901).

8175. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Galena, in sedimentary rocks. *Loc.* Rising Star Copper Area, Cressbrook Cr. (*ante*). *Assay: See* No. 3029. *Ref.* G.S.Q. Pub. 169, p. 4 (1901).

8175A.——. *Assoc.with* Galena and Copper Pyrites, in slate and quartzite. *Loc.* Deep Rocky Gorge, between Murphy's Cr. and Perseverance, 4½ miles N.byE. of Murphy's Cr. Rail. Stn. (Main line) *Co* Cavendish; *Dist.* Moreton. *Ref.* O.R. (1910).

8175B.——. *Assoc.with* Galena and Iron Pyrites, in lode. *Loc.* Kipper Cr., 8 miles W. of Esk Rail. Stn. (Brisbane Valley Br.). *Co.* Cavendish (*ante*). *Ref.* A.R., p. 245 (1910).

8176. ——. *Assoc.with* Gold, Massicot, and Galena, in gossany quartz. *Loc.* Iceberg P.A., Mt. Langan, Emu Cr., 14½ miles W.N.W. of Kannungar, Brisbane Valley line. *Co.* Cavendish (*ante*). *Ref.* L.C.B.

8176A.——. *Assoc.with* Gold, Silver, and Galena, in lode. *Loc.* Langan's Mine, Mt. Langan (*ante*). *Ref.* A.R., p. 213 (1910).

8177. ——. *Assoc.with* Iron Pyrites, in quartz. *Loc.* McPhee's Sel., Mountain Camp, Enoggera, 6½ miles W. of Brisbane. *Co.* Stanley; *Dist.* Moreton.

8178. ——. *Assoc.with* Gold, Iron Pyrites, and Zinc Blende, in quartz. *Loc.* Perseverance Reef, Mountain Camp (*ante*). *Ref.* G.S.Q. Pub. 143, p. 9 (1899), and G.S.M.

8178A.——. *Assoc.with* Iron Pyrites, in lode. *Loc.* Geike's Sel., Upper Coomera, 38 miles (by rail) S.E. of Brisbane. *Co.* Ward; *Dist.* Moreton. *Ref.* G.S.M.

8179. ——. *Assoc.with* Galena, Iron Pyrites, and Copper Pyrites, in quartz reef. *Loc.* Friend's Mine, Barmundoo Goldfield, 28 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* **Port Curtis.** *Assay: See* No. 3036. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

8180. ——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz reef. *Loc.* Georgina Mine, Barmundoo Goldfield (*ante*). *Ref.* G.S.M.

8181. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Mispickel. *Loc.* Griffith's Reef, W. of Digger's Cr., Barmundoo Goldfield (*ante*). *Assay: See* No. 4235. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

8182. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel and Zinc Blende, in quartz reef. *Loc.* Roger's Mine, Bompa Goldfield, 44½ miles S.byE. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 58, p. 7 (1890).

8183. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Galena, in quartz and calcite. *Loc.* Stand-by Reef, Mt. Jacob Mine, Bompa Goldfield (*ante*). *Assay: See* No. 4251. *Ref.* G.S.Q. Pub. 58, p. 6 (1890).

8184. ——. *Assoc.with* Gold, Iron Pyrites, and Mispickel. *Loc.* Good Hope Mine, Crow's Cr., Barmundoo Run, 35 miles S.byW. of Gladstone. *Co.* Clinton; *Dist.* Port Curtis. *Assays: See* No. 4242. *Ref.* G.S.Q. Pub. 58, p. 5 (1890).

8185. ——. *Assoc.with* Copper Pyrites, Cuprite, Bornite, Tenorite, Malachite, Azurite, Galena, Hematite, Magnetite, Garnet, Chlorite, and Calcite. *Loc.* Glassford Cr. Copper Mines, Glassford Cr., 8 miles W.S.W. of Many Peaks Rail. Stn. (Boyne-Valley line), 66 miles (by rail and road) S. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 150, pp. 5-7 (1900), 194, p. 28 (1904).

8186. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, Galena, Mispickel, and Calcite, in quartz. *Loc.* Advance Reef, **Norton Goldfield,** 33 miles S.byE. of Gladstone. *Co.* Clinton (*ante*). *Ref.* G.S.Q. Pubs. 21, p. 6 (1885), 208, p. 11 (1907), and G.S.M.

8187. ——. *Assoc.with* Gold, Silver, Iron Pyrites, and Galena, in quartz and calcite. *Loc.* All Nation's Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 13 (1907).

8188. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Galena, and Malachite, in quartz. *Loc.* Brigham Young (Tadman's Tapautohaunga) Mine, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, pp. 15, 16 (1907).

8189. Zinc Blende. *Assoc.with* Gold, Silver, Copper Pyrites, Iron Pyrites, Mispickel, Redruthite, Azurite, Malachite, and Scorodite, in quartz. *Loc.* Chandler's Reef, Norton Goldfield (*ante*). *Assays: See* No. 4269. *Ref.* G.S.Q. Pub. 208, p. 18 (1907).

8190. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Galena, and Mispickel, in quartz. *Loc.* Conran's Reef, Norton Goldfield (*ante*). *Assay: See* No. 4270. *Ref.* G.S.Q. Pub. 58, p. 8 (1890), and G.S.M.

8191. ——. *Assoc.with* Gold, Galena, Iron Pyrites, and Calcite, in quartz reef. *Loc.* Frampton United Mine, Norton Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

8192. ——. *Assoc.with* Gold, Iron Pyrites, Galena, and Mispickel, in quartz and calcite. *Loc.* Frampton Reef, Norton Goldfield (*ante*). *Ref.* G.S.M. and G.S.Q. Pub. 208, p. 21 (1907).

8193. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Galena, and Copper Pyrites, in quartz. *Loc.* Galena Reef, Norton Goldfield (*ante*). *Assay: See* No. 3048. *Ref.* G.S.Q. Pub. 208, pp. 22-24 (1907).

8194. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Galena, and Redruthite, in quartz. *Loc.* Goody's (Carmichael's) Reef, Norton Goldfield (*ante*). *Assay: See* No. 4277. *Ref.* G.S.Q. Pub. 208, p. 26 (1907).

8195. ——. *Assoc.with* Gold, Galena, Iron Pyrites, and Calcite, in quartz. *Loc.* Hickey's Reef, Norton Goldfield (*ante*). *Ref.* P.R.S.Q., vol. 4, p. 49 (1887).

8196. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Copper Pyrites, and Mispickel, in quartz. *Loc.* Little Wonder Reef, Norton Goldfield (*ante*). *Assay: See* No. 4280. *Ref.* G.S.Q. Pub. 208, p. 29 (1907).

8197. ——. *Assoc.with* Gold, Silver, and Iron Pyrites, in quartz and calcite. *Loc.* Marodian Reef, Norton Goldfield (*ante*). *Ref.* (and *Assays*) G.S.Q. Pub. 208, p. 32 (1907).

8198. ——. *Assoc.with* Gold, Iron Pyrites, Mispickel, and Limonite, in quartz. *Loc.* Paddock Reef, Norton Goldfield (*ante*). *Ref.* G.S.Q. Pub. 208, p. 34 (1907).

8199. ——. *Assoc.with* Gold, Iron Pyrites, Copper Pyrites, and Mispickel, in quartz. *Loc.* Sulphide Reef, Norton Goldfield (*ante*). *Assay: See* No. 4292. *Ref.* G.S.Q. Pub. 208, p. 38 (1907).

8200. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, and Galena, in quartz and calcite. *Loc.* Who'd-ha'-thought-it Reef, Norton Goldfield (*ante*). *Assay: See* No. 4294. *Ref.* G.S.Q. Pubs. 21, p. 6 (1885), 208, p. 39 (1907).

8200A. ——. *Assoc.with* Gold, Silver, Galena, and Copper Pyrites, in quartz reef in diorite country. *Loc.* Britannia Mine, N. of Lake Learmouth, Canoona Goldfield, 35 miles N.byW. of Rockhampton. *Co.* Lieberg; *Dist.* Port Curtis. *Assay: See* No. 4315c. *Ref.* B.D.

8201. ——. *Assoc.with* Gold, Galena, and Dolomite, in quartz reef. *Loc.* Annie Mine, Cawarral Goldfield, 22 miles (by rail) N.N.E. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 125, p. 28 (1897), and G.S.M.

8202. —— (traces). *Assoc.with* Copper Ores. Mt. Chalmers, 3 miles N.W. of Tungamull Rail. Stn., 21 miles (by rail and road) N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* G.S.Q. Pub. 216 (1907).

8203. ——. *Assoc.with* Silver, Cuprite, Tenorite, Malachite, Cerussite, Iron Pyrites, and Barytes, in serpentinous shales. *Loc.* Mt. Warminster Copper-Lead Mine, 19 miles (by rail) N.E. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* B.D.

8203A. ——. *Assoc.with* Gold, Telluride of gold and silver, and Iron Pyrites, in calcite and quartz. *Loc.* Anglo-Saxon Mine, Mt. Usher, 6 miles N.E. of Mt. Morgan Rail. Stn. *Co.* Livingstone (*ante*). *Ref.* O.R.

8204. ——. *Assoc.with* Gold, Galena, and Copper Pyrites, in quartz reef. *Loc.* Mary Florence Mine, Blackfellow's Gully, Morinish Goldfield, 32 miles N.W. of Rockhampton. *Co.* Livingstone (*ante*). *Ref.* A.R.D.M., p. 60 (1885).

8205. ——. *Assoc.with* Mispickel and Copper Pyrites. *Loc.* Mine, nr. Cania Goldfield, 60 miles S.S.W. of Gladstone. *Co.* Pelham; *Dist.* Port Curtis. *Ref.* A.R. D.M., p. 34 (1894).

8206. ——. *Assoc.with* Gold, Copper Pyrites, Iron Pyrites, and Mispickel, in quartz. *Loc.* Queen of the Valley Mine, between Dee R. and Crocodile Cr., 4 miles N.E. of Mt. Morgan Rail. Stn. *Co.* Raglan; *Dist.* Port Curtis. *Ref.* G.S.Q. Pub. 132, p. 13 (1898).

8207. ——. *Assoc.with* Gold, Iron Pyrites, and Copper Pyrites, in quartz and calcite. *Loc.* Roxburgh Mine, between Dee R. and Gavial Cr., 14 miles S. of Rockhampton. *Co.* Raglan (*ante*). *Ref.* G.S.Q. Pub. 132, p. 14 (1898).

8208. ——. *Assoc.with* Copper Pyrites, Tetrahedrite, Azurite, Malachite, Galena, Iron Pyrites, and Calcite, in slate, diorite, andesite, etc. *Loc.* Blue Bell Copper Mine, Amamoor Cr., 19 miles S.S.E. of Gympie. *Co* Lennox; *Dist.* **Wide Bay.** *Ref.* L.C.B.

8209. ——. *Assoc.with* Gold, Silver, Iron Pyrites, Mispickel, Galena, and Copper Pyrites, in quartz and schorl. *Loc.* Victoria Reef, Black Snake, 10 miles S. of Kilkivan. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 7 (1886).

8210. ——. *Assoc.with* Copper Pyrites, Iron Pyrites, and Galena. *Loc.* Mellor and Elworthy's Stn., Imbill, 8 miles from Kandanga, 15 miles S. of Gympie. *Co.* Lennox (*ante*). *Assay: See* No. 3075. *Ref.* A.R., p. 93 (1907).

8210A.——. *Assoc.with* Gold, Iron Pyrites, and Galena, in quartz and calcite. *Loc.* Rise and Shine Reef, Kilkivan Goldfield, 48 miles (by rail) W. of Gympie. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 28, p. 2 (1886).

8211. ——. *Assoc.with* gold, Iron Pyrites, Copper carbonate, and Limonite, in quartz and calcite. *Loc.* Mt. Ruby, ½-mile W.N.W. of Glenbar head stn., 20 miles W. of Tiaro, Rail. Stn. (North Coast line). *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 59, p. 6 (1890).

8212. ——. *Assoc.with* Gold, Iron Pyrites, Galena, Calamine, Tenorite, and Copperas, in quartz. *Loc.* Beer and Dawson's Lease, Running Cr., Yorkey's Goldfield, 9 miles N. of Kilkivan Rail. Stn. *Co.* Lennox (*ante*). *Ref.* G.S.Q. Pub. 179, p. 8 (1902).

8213. ——. *Assoc.with* Gold, Hematite, Iron Pyrites, and Copper Pyrites, in quartz. *Loc.* Ortt's Mine, Yorkey's Goldfield (*ante*). *Ref.* G.S.M.

8214. ——. *Assoc.with* Gold, Iron Pyrites, Siderite, and Galena, in quartz. *Loc.* Enterprise Reef, on br. of Cochrane Cr., 5 miles N.W. of Gympie. *Co.* March; *Dist.* Wide Bay. *Ref.* G.S.Q. Pub. 52, p. 12 (1889).

8215. ——. *Assoc.with* Gold and Galena, in quartz. *Loc.* Exhibition Reef, 6 miles N. of Gympie. *Co.* March (*ante*). *Ref.* G.S.Q. Pub. 52, p. 12 (1889).

8216. ——. *Assoc.with* Copper Pyrites and Galena. *Loc.* Mt. Widgee, 14 miles W. of Gympie. *Co.* March (*ante*). *Ref.* A.R., p. 163 (1908).

Zinc carbonates. *See* Aurichalcite and Calamine.

—— silicates. *See* Smithsonite and Willemite.

—— sulphate. *See* Goslarite.

—— sulphide. *See* Zinc Blende.

Zircon. *Compo.*, Silicate of zirconia. *Colour*, reddish, yellowish, colourless, etc. *Lustre*, adamantine. *H.* = 7·5. *Sp.gr.* = 4·68-4·70. *Varieties:* Hyacinth (red, yellow, brown); Jargoon (smoky). *See map*, Pls. 11, 13.

Mineral Note: Seldom found *in situ*, but very common in drift deposits in association with gold, tin, and sapphires, occurring also in many of the beach sands on the Queensland coast. Hyacinth, the precious variety, is a common associate of the sapphire at Anakie, and gems of beautiful colour and lustre, weighing over 30 carats, have been cut from stones found on this field.

The alluvial deposits at Anakie containing the zircons, sapphires, etc., are many square miles in extent, and rest on granite, altered sedimentary rocks and basalt, the latter rock being the "carrier" of the zircons, as it is of the other gemstones.

Large quantities of zircons are to be found in the watercourses at Eungella Goldfield, and, although too small for gem purposes, might ultimately become of economic value.

8216A.——. *Assoc.with* Cassiterite, Ilmenite, Rutile, Topaz, and Amethyst, in alluvial deposits. *Loc.* P.C. Workings, Rocky Cr., 5 miles above Brovinia Cr., br. of Cardarga Cr., 35½ miles S.S.W. of Gayndah, 60 miles (by road) *viâ* Cooranga Head Stn. *Co.* Newcastle; *Dist.* **Burnett.** *Ref.* Q.G.M.J., vol. 5, p. 62 (1904).

8217. ——. *Assoc.with* Ilmenite and Magnetite. *Loc.* In creeks forming the heads of the Boyne and Stuart Rivers 55 miles S. of Gladstone. *Co.* Fitzroy; *Dist.* Burnett. *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

8218. Zircon. In surface deposits, Greenhills Goldfield, 24 miles S.W.byS. of Georgetown. *Cos.* Gilbert; *Dist.* **Cook.** *Ref.* B.D.

8219. ——. Tate R., Fisherton, 24 miles W.S.W. of Almaden (Chillagoe Rail. line), Walsh and Tinaroo Mineral Fields. *Co.* Lynd; *Dist.* Cook. *Ref.* P.R.S.Q, vol. 15, p. 66 (1900).

8220. ——. In alluvial deposits, Henrietta Cr., Jordan Cr. Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* Cook. *Ref.* G.S.M.

8221. ——. *Assoc.with* Cassiterite, in alluvial deposits. *Loc.* Herberton, 82 miles (by rail) S.W. of Cairns (Cairns line), Walsh and Tinaroo Mineral Fields. *Co.* Cardwell; *Dist.* **Kennedy North.** *Ref.* P.R.S.Q., vol. 4, p. 66 (1887).

8221A. ——. *Assoc.with* Gold, Chalcedony, Jasper, Lydianstone, and Sapphire, in alluvial deposits. *Loc.* 14v, Bunerba, ½-mile S. of Don R., about 39 miles S. of Bowen. *Co.* Herbert; *Dist.* Kennedy North. *Ref.* Q.G.M.J., vol. 5, pp. 610, 611 (1904).

8222. ——. *Assoc.with* Gold and Garnet, in alluvial deposits. *Loc.* Black Waterhole Cr., 2 miles N.byE. of Hazledean, 24 miles S.W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pub. 164, p. 10 (1901).

8223. ——. Head of Constant Creek, Hampden, 20 miles N.W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.Q. Pub. 53, p. 9 (1889).

8224. ——. Mirani, 22 miles (by rail) W. of Mackay. *Co.* Carlisle (*ante*). *Ref.* G.S.M.

8225. ——. *Assoc.with* Magnetite, Ilmenite, and Cassiterite. *Loc.* Normanby Goldfield, 46 miles S. of Bowen. *Co.* Carlisle (*ante*). *Ref.* O.R.

8226. ——. *Assoc.with* Pleonaste, in quartz. *Loc.* Crow's Nest (Ravensbourne), 34 miles (by rail) N.N.E. of Toowoomba, 135 miles (by rail) W.N.W. of Brisbane. *Co.* Cavendish; *Dist.* **Moreton.**

8227. ——. *Assoc.with* Gold (alluvial), Ruby, Almandine, Spinel, Sapphire (blue), Topaz (white), and Zircon, in alluvial deposits. *Loc.* Wallace's and Eldridge's Claim, Seven-mile Diggings Goldfield (Nanango), 123 miles N.W.byN. of Brisbane. *Co.* Cavendish (*ante*). *Ref.* L.C.B.

8228. ——. *Assoc.with* Gold, Magnetite, Ilmenite, Mica, and Topaz, in alluvial deposits. *Loc.* 17 miles up Vanapa R., 32 miles N. of Port Moresby, **Brit. New Guinea.** *Ref.* G.S.Q. Pub. 56, p. 2 (1889).

8229. —— and **Hyacinth** (*var.*) (red, brown). *Assoc.with* Garnet, Tourmaline, Ruby, Sapphire, Corundum, and Topaz, in alluvial deposits. *Loc.* Jordan Cr. Goldfield, 22 miles W.S.W. of Geraldton. *Co.* Nares; *Dist.* **Cook.** *Ref.* G.S.Q. Pub. 157, p. 6 (1901).

8230. —— and —— (red). *Assoc.with* Cassiterite, Stannite, Topaz, Sapphire, Gold, Diamond, and Amethyst, in alluvial deposits. *Loc.* Broadwater and tributaries, Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck; *Dist.* **Darling Downs.** *Ref.* G.S.Q. Pub. 120, p. 31 (1898).

8231. —— and ——. *Assoc.with* Sapphire, Tourmaline, Rock Crystal, Cairngorm, and Cassiterite, in alluvial deposits. *Loc.* Camp Reserve, Spring Cr., 6 miles W.byS. of Stanthorpe. *Co.* Bentinck (*ante*). *Ref.* B.D.

8232 —— and ——. *Assoc.with* Gold, Cassiterite, Cairngorm, Topaz, Sapphire, Spinel, Garnet, and Diamond, in alluvial deposits. *Loc.* Spring Cr. and its tributaries, Stanthorpe, 207 miles (by rail) S.W. of Brisbane. *Co.* Bentinck (*ante*). *Ref.* G.S.Q. Pub. 120, p. 32 (1893).

8233. —— and —— (red). *Assoc.with* Diamond, Sapphire, Garnet, Spinel, Beryl, Topaz, Tourmaline, Amethyst, Rock Crystal, Cassiterite, and traces of Gold, in alluvial deposits. *Loc.* Hunt's, Quart Pot, Sugarloaf, Lode, Arbouin's, Cannon, and Kettle Swamp Creeks, and Severn R., Stanthorpe (*ante*). *Ref.* G.S.Q. Pub. 120 (1898), and B.D.

8234. —— and —— (red), in alluvial deposits. *Loc.* Eungella Goldfield, head of Broken R., 50 miles W. of Mackay. *Co.* Carlisle; *Dist.* **Kennedy South.** *Ref.* G.S.Q. Pubs. 125, p. 22 (1897), 159, p. 18 (1901).

8235. —— and ——. *Loc.* Mt. McGregor, 2½ miles E. of Mt. Toby, 2½ miles N.N.E. of Miriam Vale Rail. Stn. (Mackay line). *Co.* Carlisle (*ante*). *Ref.* G.S.M.

8236. —— and —— (red, brown). *Assoc.with* Gold, Sapphire, Spinel, Garnet, Amethyst, Cairngorm, Chalcedony, Jasper, Rutile, Topaz, Diamond, Magnetite, Ilmenite, Magnesite, Tourmaline, and Hornblende, in alluvial deposits. *Loc.* Retreat, Sheep Station, Policeman, Tomahawk, and Central Creeks, Anakie Sapphire Field, 193 miles (by rail) W. of Rockhampton. *Cos.* Clermont and Plantagenet; *Dist.* **Leichhardt.** *Ref.* G.S.Q. Pubs. 81 (1892), 125 (1897), 172, p. 20 (1902).

8237. —— and —— (red, brown). In alluvial deposits. *Loc.* Policeman Knob, Policeman Cr., 10 miles N.W.byN. of Anakie. *Co.* Clermont (*ante*). *Ref.* G.S.Q. Pub. 172, p. 7 (1902).

8238. —— and —— (red, brown). *Assoc.with* Gold, Garnet, Magnetite, and Tourmaline, in alluvial deposits below basalt. *Loc.* Basalt Diggings, 3 miles N. of Borilla Rail. Stn., 7 miles W. of Anakie. *Co.* Plantagenet; *Dist.* Leichhardt. *Ref.* G.S.Q. Pub. 172, p. 7 (1902).

Zirconium (Zr). *Atom.Wt.* = 90·6. *Sp.gr.* = 4·2 Amorphous; 5·3 Crystalline. *Colour,* greyish-metallic.

MINERALS: *See* Zircon.

USES: The metallic form of Zirconium has no industrial application, but the oxide, zirconia, is used in the fabric of incandescent gas mantles. Thoria has, however, superseded zirconia for this purpose to a great extent, as its incandescence produces greater brilliancy. Zircon, the silicate, occurs as pebbles and grains with sapphires at Anakie, and is usually a bright-coloured stone, the larger specimens being in demand for gem-making.

—— silicate. *See* Zircon.

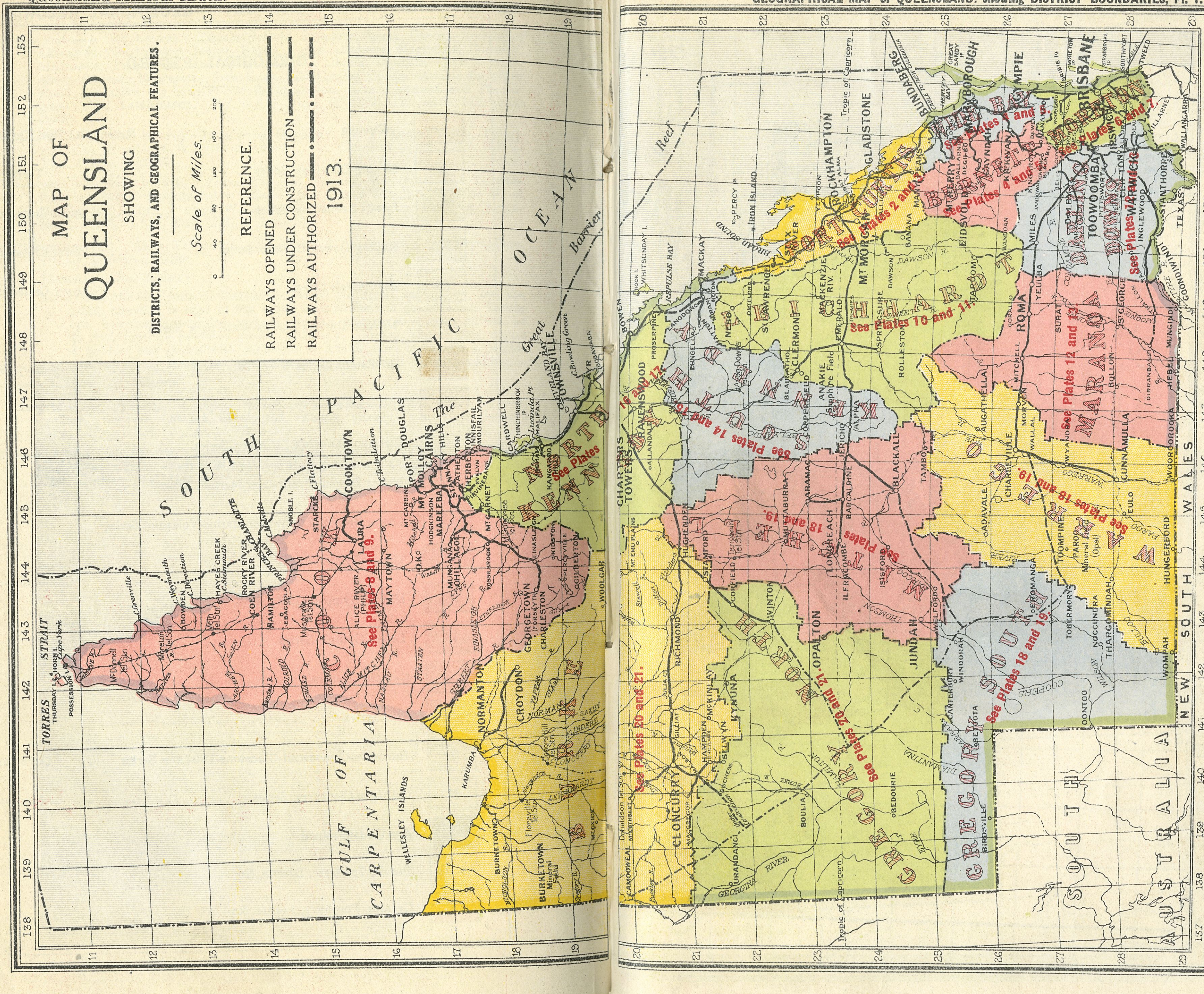
Zoicite. *Syn.* Thulite. *Compo.,* Silicate of alumina and lime. *Colour,* red, yellow, grey, etc. *Streak,* uncoloured. *Lustre,* vitreous, pearly on cleavage face. *H.* = 6-6.5. *Sp.gr.* = 3·25-3·37.

8239. ——. *Assoc.with* Epidote. *Loc.* Table Mountain, 5 miles E.byS. of Stanwell, 21 miles (by rail and road) S.W.byW. of Rockhampton. *Co.* Livingstone; *Dist.* Port Curtis. *Ref.* G.S.M

GEOLOGICAL RECORD.

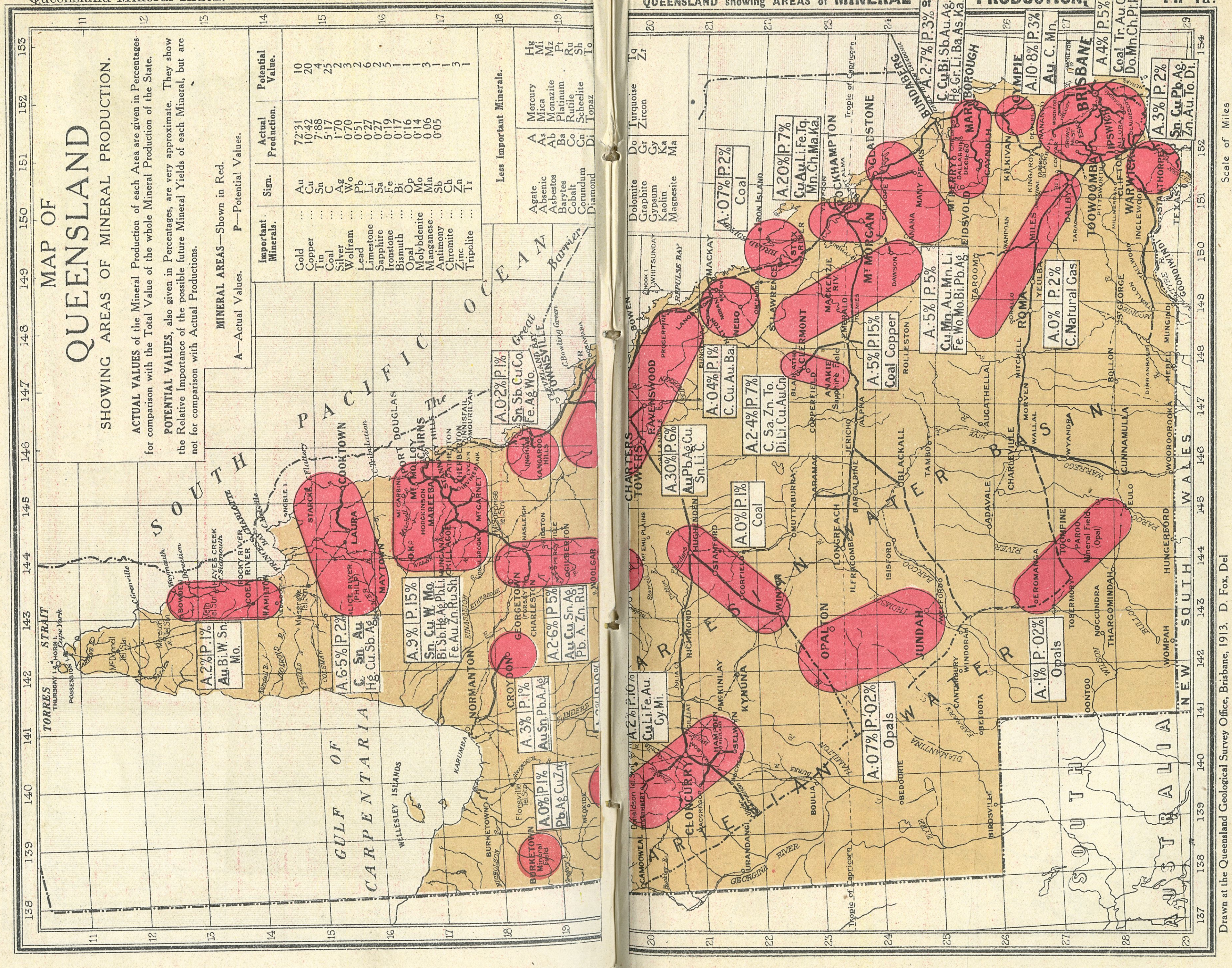
ϒ	Alluvium	Recent and Post Tertiary
T	Nerang-Duaringa Series	Tertiary ?
DS	Desert Sandstone Series	Upper Cretaceous
RD	Rolling Downs-Burrum Series	Lower Cretaceous
BL	Blythesdale Series	Lower Cretaceous
W	Walloon-Darling Downs-Waterpark Series	Trias-Jura ?
Bd	Bundamba Series	
Ip	Ipswich-Tiaro-Styx Series	
C	Clermont-Tolmie's-St. Mary Series	Permo-Carboniferous
UB	Upper Bowen (Freshwater-Marine) Series	
LB	Lower Bowen (Freshwater-Marine-Volcanic) Series	
UG	Upper Gympie Series	
MG	Middle Gympie (Gold) Series	
LG	Lower Gympie Series	
Gy	Gympie (General)	
S	Star Series	
De	Burdekin-Camooweal-Gladstone-Brisbane Series	Devonian
Si	Chillagoe-Cloncurry Series	Silurian
Q	Age Undetermined.	
Ba. Tr.	Basalt, Trachyte, Diorite, &c.	
G.P.	Granite, Porphyry, Felsite, &c.	

GEOGRAPHICAL MAP of QUEENSLAND, showing DISTRICT BOUNDARIES, Pl. 1.


MAP OF QUEENSLAND
SHOWING
DISTRICTS, RAILWAYS, AND GEOGRAPHICAL FEATURES.
Scale of Miles.
0 40 80 120 160 200
REFERENCE.
RAILWAYS OPENED
RAILWAYS UNDER CONSTRUCTION
RAILWAYS AUTHORIZED
1913.
SOUTH PACIFIC OCEAN
The Great Barrier Reef
GULF OF CARPENTARIA
TORRES STRAIT
WELLESLEY ISLANDS
NEW SOUTH WALES
SOUTH AUSTRALIA
COOK
See Plates 8 and 9.
BURKE
KENNEDY
NORTH KENNEDY
See Plates 16 and 17.
See Plates 20 and 21.
NORTH GREGORY
See Plates 20 and 21.
GREGORY
SOUTH GREGORY
See Plates 18 and 19.
MITCHELL
See Plates 18 and 19.
SOUTH KENNEDY
See Plates 14 and 15.
LEICHHARDT
See Plates 10 and 11.
PORT CURTIS
See Plates 2 and 3.
BURNETT
See Plates 4 and 5.
WIDE BAY
See Plates 4 and 5.
MORETON
See Plates 6 and 7.
DARLING DOWNS
See Plates 6 and 7.
MARANOA
See Plates 12 and 13.
WARREGO
See Plates 18 and 19.
COOKTOWN
CAIRNS
PORT DOUGLAS
TOWNSVILLE
BOWEN
MACKAY
ROCKHAMPTON
GLADSTONE
BUNDABERG
MARYBOROUGH
GYMPIE
BRISBANE
TOOWOOMBA
WARWICK
ROMA
CHARLEVILLE
CHARTERS TOWERS
HUGHENDEN
LONGREACH
CLONCURRY
NORMANTON
CROYDON
BURKETOWN
BIRDSVILLE
WINTON
CLERMONT
EMERALD
SPRINGSURE
BARCALDINE
BLACKALL
TAMBO
CUNNAMULLA
ST GEORGE
GOONDIWINDI
STANTHORPE
138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154
10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

Drawn at the Queensland Geological Survey Office, Brisbane, 1913. D. Fox, Del.

Map of QUEENSLAND showing AREAS of MINERAL PRODUCTION, Pl. 1a.



MAP OF QUEENSLAND

SHOWING AREAS OF MINERAL PRODUCTION.

ACTUAL VALUES of the Mineral Production of each Area are given in Percentages for comparison with the Total Value of the whole Mineral Production of the State.

POTENTIAL VALUES, also given in Percentages, are very approximate. They show the Relative Importance of the possible future Mineral Yields of each Mineral, but are not for comparison with Actual Productions.

MINERAL AREAS—Shown in Red.

A—Actual Values. P—Potential Values.

Important Minerals.	Sign.	Actual Production.	Potential Value.
Gold ...	Au	72·31	10
Copper ...	Cu	10·42	20
Tin ...	Sn	7·88	4
Coal ...	C	5·17	25
Silver ...	Ag	1·70	2
Wolfram ...	Wo	0·70	3
Lead ...	Pb	0·51	2
Limestone ...	Li	0·27	6
Sapphire ...	Sa	0·27	2
Ironstone ...	Fe	0·19	5
Bismuth ...	Bi	0·17	1
Opal ...	Op	0·16	1
Molybdenite ...	Mo	0·14	1
Manganese...	Mn	0·06	3
Antimony ...	Sb	0·05	1
Chromite ...	Ch		1
Zinc ...	Zn		3
Tripolite ...	Tr		1

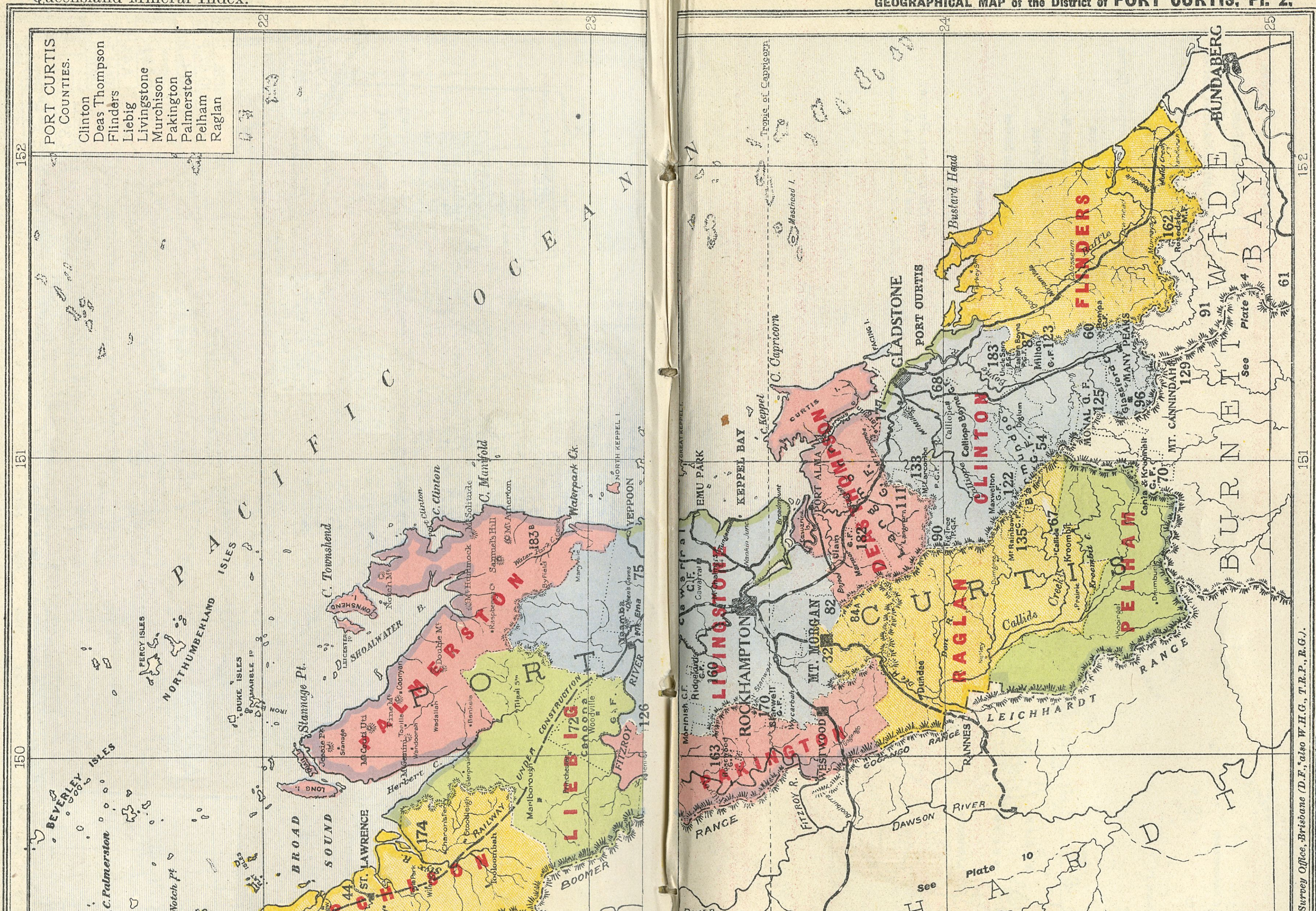
Less Important Minerals.

Agate	A	Mercury	Hg
Absenic	As	Mica	Mi
Asbestos	Ab	Monazite	Mz
Barytes	Ba	Platinum	Pt
Cobalt	Co	Rutile	Ru
Corundum	Cn	Scheelite	Sh
Diamond	Di	Topaz	To
Dolomite	Do	Turquoise	Tq
Graphite	Gr	Zircon	Zr
Gypsum	Gy		
Kaolin	Ka		
Magnesite	Ma		

SOUTH PACIFIC OCEAN
GULF OF CARPENTARIA
TORRES STRAIT
The Great Barrier
ARTESIAN WATER BASIN
NEW SOUTH WALES
SOUTH AUSTRALIA
Tropic of Capricorn
Scale of Miles 0 40 80 120 160 200
A.2% P.1% Au.Bi.W.Sn. Mo.
A.6·5% P.2% C. Sn. Au. Hg.Cu.Sb.Ag.
A.9% P.15% Sn. Cu. W. Mo. Bi.Sb.Hg.Ag.Pb.Li. Fe.Au.Zn.Ru.Sh.
A.2·6% P.5% Au.Cu.Sn.Ag. Pb. A. Zn. Ru.
A.3% P.1% Au.Sn.Pb.Ag.
A.0% P.1% Pb.Ag.Cu.Zn.
A.0·2% P.1% Sn.Sb.Cu.Co. Fe.Ag.Wo.
A.2% P.10% Cu.Li.Fe.Au. Gy.Mi.
A.30% P.6% Au.Pb.Ag.Cu. Sn.Li.C.
A.04% P.1% C. Cu. Au. Ba.
A.2·4% P.7% C. Sa.Zn.To. Di.Li.Cu.Au.Cn.
A.0% P.1% Coal
A.07% P.02% Opals
A.07% P.2% Coal
A.20% P.7% Cu.Au.Li.Fe.Tq. Mn.Ch.Ma.Ka.
A.5% P.15% Coal Copper
A.5% P.5% Cu.Mn.Au.Mn.Li. Fe.Wo.Mo.Bi.Pb.Ag.
A.0% P.2% C.Natural Gas
A.1% P.02% Opals
A.2·7% P.3% C.Cu.Bi.Sb.Au.Ag. Hg.Gr.Li.Ba.As.Ka.
A.10·8% P.3% Au. C. Mn.
A.4% P.5% Coal Tr. Au. Cu. Do.Mn.Ch.Pt.Ka.
A.3% P.2% Sn.Cu.Pb.Ag. Zn.Au.To.Di.
COOKTOWN
CAIRNS
TOWNSVILLE
CHARTERS TOWERS
RAVENSWOOD
BOWEN
MACKAY
ROCKHAMPTON
MT MORGAN
GLADSTONE
BUNDABERG
MARYBOROUGH
GYMPIE
BRISBANE
IPSWICH
TOOWOOMBA
WARWICK
STANTHORPE
ROMA
CLERMONT
HUGHENDEN
WINTON
OPALTON
JUNDAH
CLONCURRY
CROYDON
GEORGETOWN
NORMANTON
BURKETOWN
TOOMPINE
EROMANGA
CHARLEVILLE
LONGREACH
BLACKALL
BARCALDINE

Drawn at the Queensland Geological Survey Office, Brisbane, 1913. D. Fox, Del

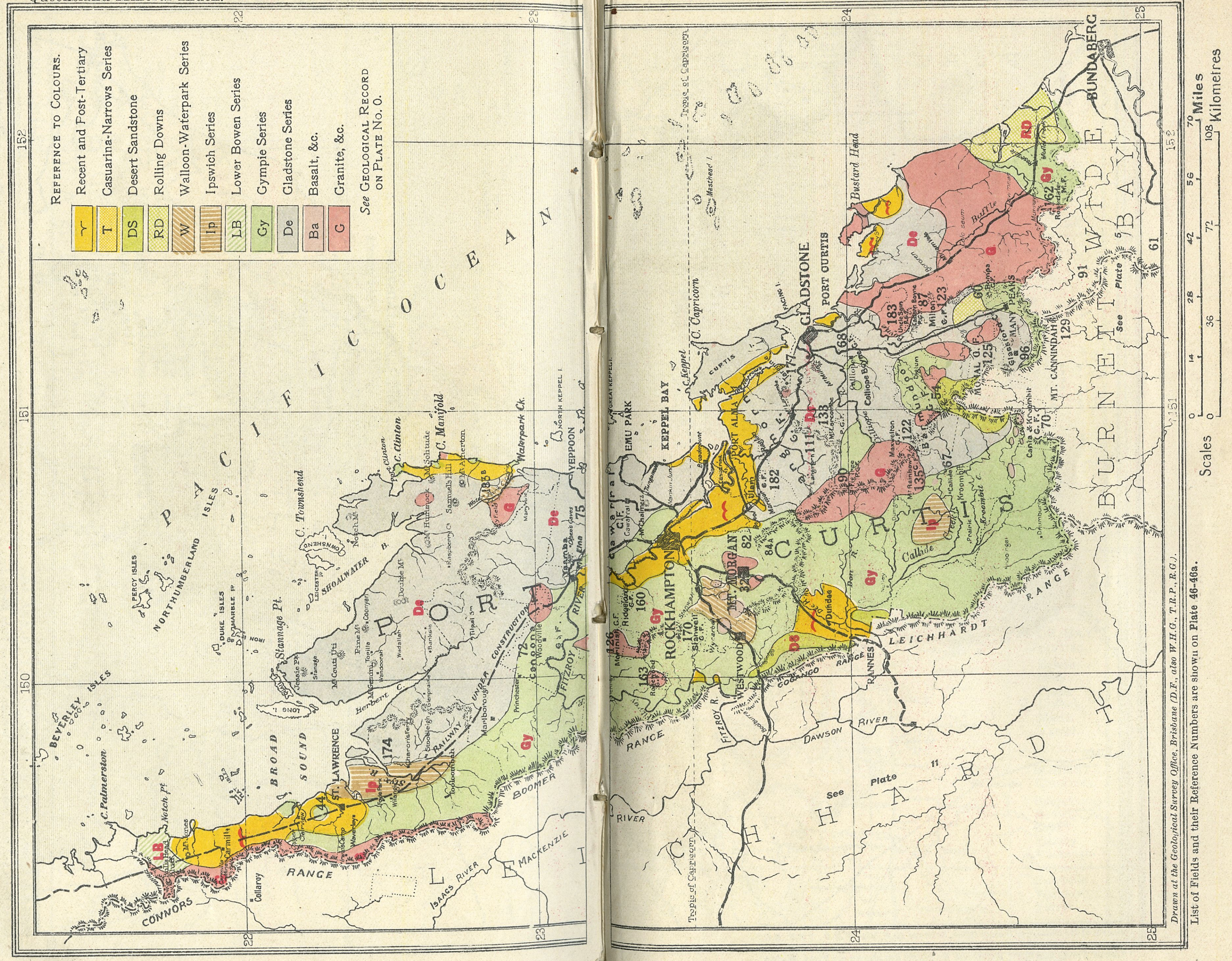
GEOGRAPHICAL MAP of the District of PORT CURTIS. Pl. 2.


PORT CURTIS
COUNTIES.
Clinton
Deas Thompson
Flinders
Liebig
Livingstone
Murchison
Pakington
Palmerston
Pelham
Raglan
PACIFIC OCEAN
PORT CURTIS
LEICHHARDT
BURNETT
WIDE BAY
See Plate 4
See Plate 10
MURCHISON
PALMERSTON
LIEBIG
LIVINGSTONE
PAKINGTON
DEAS THOMPSON
CLINTON
RAGLAN
PELHAM
FLINDERS
ROCKHAMPTON
GLADSTONE
PORT CURTIS
BUNDABERG
MT. MORGAN
WESTWOOD
RANNES
EMU PARK
KEPPEL BAY
YEPPOON
PORT ALMA
MT. CANNINDAH
MANY PEAKS
ST. LAWRENCE
BROAD SOUND
SHOALWATER B.
NORTHUMBERLAND ISLES
PERCY ISLES
BEVERLEY ISLES
DUKE ISLES
C. Palmerston
Notch Pt.
C. Townshend
C. Clinton
C. Manifold
C. Capricorn
C. Keppel
Bustard Head
Stannage Pt.
Tropic of Capricorn
CONNORS RANGE
BOOMER RANGE
LEICHHARDT RANGE
COGANGO RANGE
DAWSON RIVER
FITZROY RIVER
ISAACS RIVER
MACKENZIE RIVER
UNDER CONSTRUCTION RAILWAY
Callide Creek
Kroombit C.
Waterpark Ck.
22
23
24
25
150
151
152
Scales
0 14 28 42 56 70 Miles
0 36 72 108 Kilometres
44
174
172
126
75
183B
160
163
170
32
82
84A
183
111
133
90
122
135
67
54
125
96
70
129
91
60
123
87
68
77
61
162

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on Plate 46-46a.

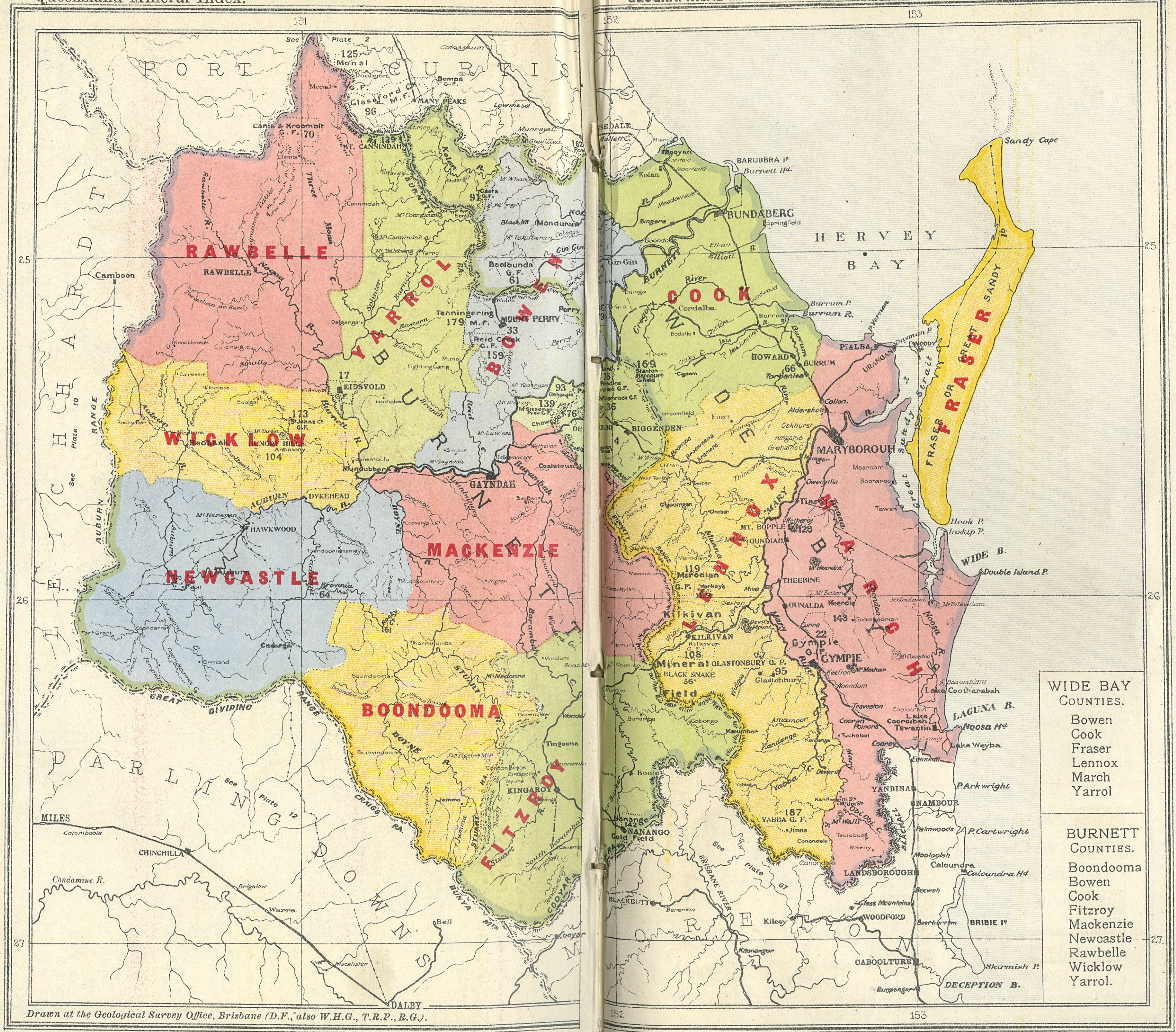
GEOLOGICAL MAP of the District of PORT CURTIS, Pl. 3.


REFERENCE TO COLOURS.
Recent and Post-Tertiary
T Casuarina-Narrows Series
DS Desert Sandstone
RD Rolling Downs
W Walloon-Waterpark Series
Ip Ipswich Series
LB Lower Bowen Series
Gy Gympie Series
De Gladstone Series
Ba Basalt, &c.
G Granite, &c.
See GEOLOGICAL RECORD ON PLATE No. 0.
PACIFIC OCEAN
PORT CURTIS
LEICHHARDT
BURNETT
WIDE BAY
NORTHUMBERLAND ISLES
PERCY ISLES
DUKE ISLES
BEVERLEY ISLES
BROAD SOUND
SHOALWATER B.
KEPPEL BAY
ROCKHAMPTON
GLADSTONE
BUNDABERG
ST. LAWRENCE
YEPPOON
EMU PARK
PORT ALMA
MT. MORGAN
WESTWOOD
RANNES
C. Palmerston
C. Townshend
C. Clinton
C. Manifold
C. Keppel
C. Capricorn
Bustard Head
Masthead I.
Tropic of Capricorn
CONNORS RANGE
BOOMER RANGE
LEICHHARDT RANGE
COGANGO RANGE
DAWSON RIVER
FITZROY RIVER
MACKENZIE RIVER
ISAACS RIVER
Waterpark Ck.
Herbert C.
MANY PEAKS
MT. CANNINDAH
See Plate 11
See Plate 5
Scales
Miles 0 14 28 42 56 70
Kilometres 0 36 72 108
150
151
152
22
23
24
25

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

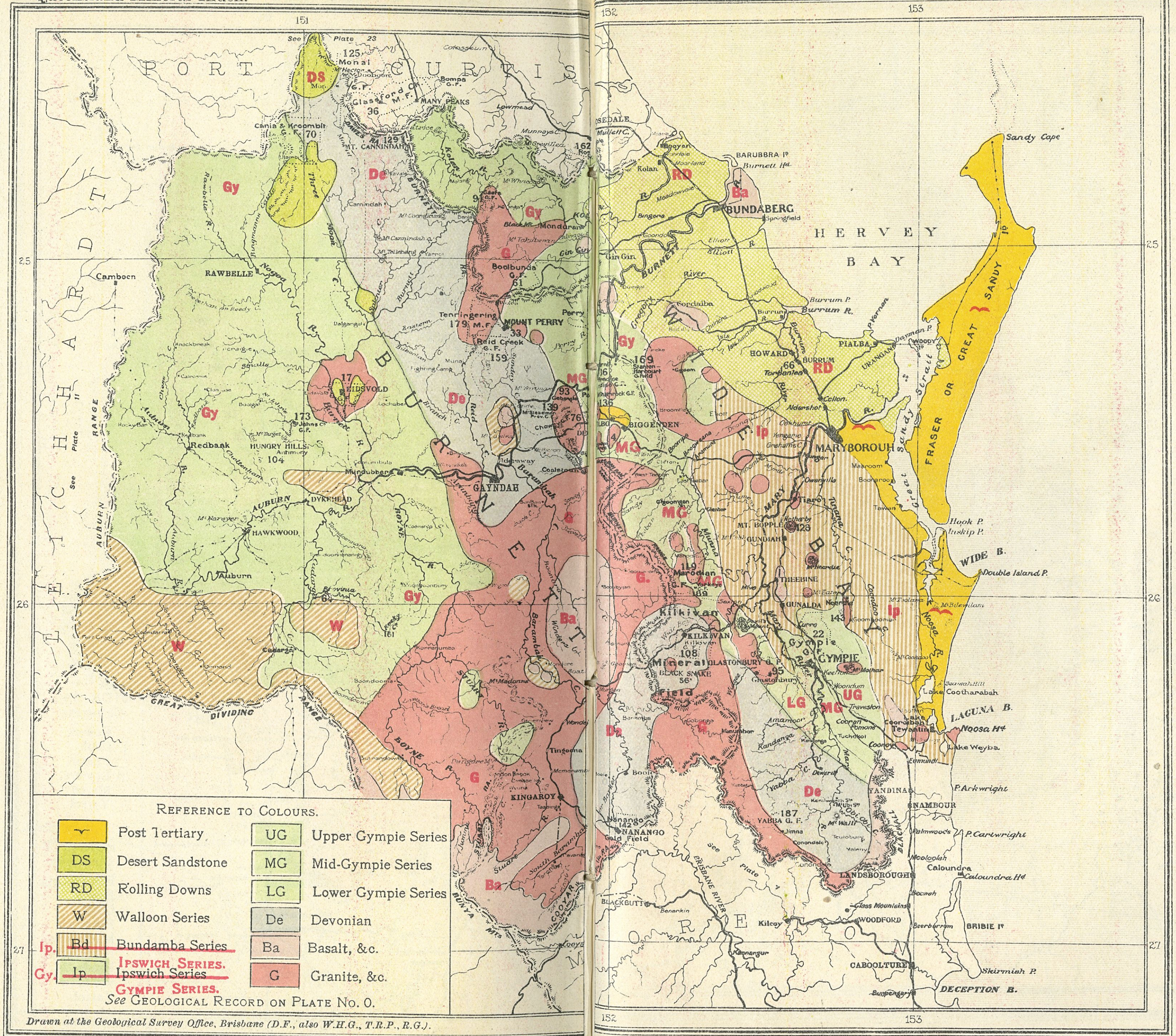
GEOGRAPHICAL MAP of the District of WIDE BAY and BURNETT, Pl. 4.


PORT CURTIS
LEICHHARDT
DARLING DOWNS
MORETON
WIDE BAY
BURNETT
RAWBELLE
WICKLOW
NEWCASTLE
YARROL
BOWEN
MACKENZIE
BOONDOOMA
FITZROY
COOK
LENNOX
MARCH
FRASER
HERVEY BAY
GREAT SANDY OR FRASER ID
BUNDABERG
MARYBOROUGH
GYMPIE
GAYNDAH
EIDSVOLD
MOUNT PERRY
BIGGENDEN
KILKIVAN
NANANGO
KINGAROY
CHINCHILLA
MILES
DALBY
CABOOLTURE
WOODFORD
NAMBOUR
LANDSBOROUGH
Sandy Cape
WIDE BAY
COUNTIES.
Bowen
Cook
Fraser
Lennox
March
Yarrol
BURNETT
COUNTIES.
Boondooma
Bowen
Cook
Fitzroy
Mackenzie
Newcastle
Rawbelle
Wicklow
Yarrol.
151
152
153
25
26
27
Scales
0
26½
53 Miles
0
24
48
72
Kilometres

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

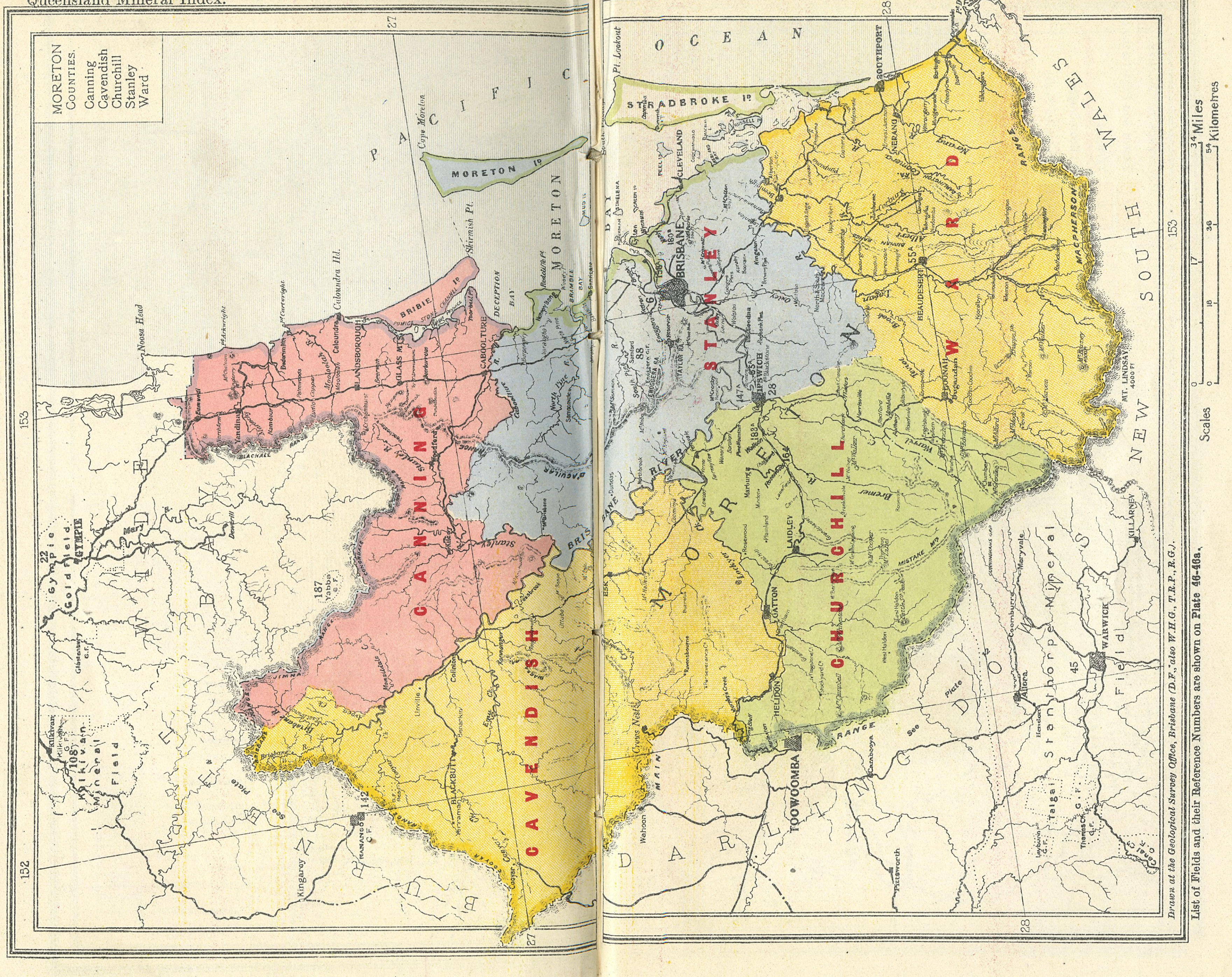
GEOLOGICAL MAP of the District of WIDE BAY and BURNETT, Pl. 5.


151
152
153
25
26
27
See Plate 23
PORT CURTIS
LEICHHARDT
BURNETT
WIDE BAY
MORETON
HERVEY BAY
DS
Gy
De
G
RD
Ba
MG
Ip
W
Dc
UG
LG
125 Monal
Mt. Hector
Boolboonda
Glassford Ck. M.F.
36
Many Peaks
Bompa G.F.
Colosseum
Lowmead
Cania & Kroombit G.F. 70
Mt. Cannindah
129
162
Rosedale
Mullett C.
Kolan
Barubbra Id
Burnett Hd
Bundaberg
Springfield
Monduran
Boolbunda G.F. 61
Gin Gin
Rawbelle
Cambcon
Teningering 179 M.F.
Mount Perry 33
Reid Creek G.F. 159
Perry
169
Stanton Harcourt G.F.
Burrum R.
Howard
Burrum
66
Torbanlea
Pialba
Urangan
Woody
Sandy Cape
Great Sandy Strait
Fraser or Great Sandy Id
Eidsvold
17
173
Johns Ck. G.F.
Hungry Hills Antimony 104
Redbank
Auburn
Dykehead
Mundubbera
Hawkwood
93
139
76
Chowey
Biggenden
Maryborough
Aldershot
Colton
Gayndah
Coalstoun
Mt. Bopple
123
Gundiah
Tiaro
Hook P.
Inskip P.
Wide B.
Double Island P.
119
Marodian G.F.
189
Theebine
Gunalda
143
Kilkivan
108
Mineral Field
Black Snake 56
Olastonbury G.F. 95
Gympie 22
Lake Cootharaba
Laguna B.
Noosa Hd
Lake Weyba
Tewantin
Cooroy
Eumundi
Yandina
Nambour
P. Arkwright
P. Cartwright
Mooloolah
Caloundra
Caloundra Hd
Landsborough
Glass Mountains
Woodford
Beerburrum
Bribie Id
Caboolture
Skirmish P.
Deception B.
Kilcoy
Blackbutt
Nanango 142
Nanango Gold Field
Kingaroy
Tingoora
Yabba G.F. 187
Jimna
Kandanga
Amamoor
Cooran
Pomona
Traveston
Mt. Madonna
Barambah
Boyne R.
Stuart R.
Bunya Mts.
Cooyar
Great Dividing Range
Auburn Range
See Plate
Brisbane River
See Plate
64
161
Proston
REFERENCE TO COLOURS.
Post Tertiary
DS Desert Sandstone
RD Rolling Downs
W Walloon Series
Ip. ~~Bd Bundamba Series~~
IPSWICH SERIES.
Gy. ~~Ip Ipswich Series~~
GYMPIE SERIES.
UG Upper Gympie Series
MG Mid-Gympie Series
LG Lower Gympie Series
De Devonian
Ba Basalt, &c.
G Granite, &c.
See GEOLOGICAL RECORD ON PLATE No. 0.

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

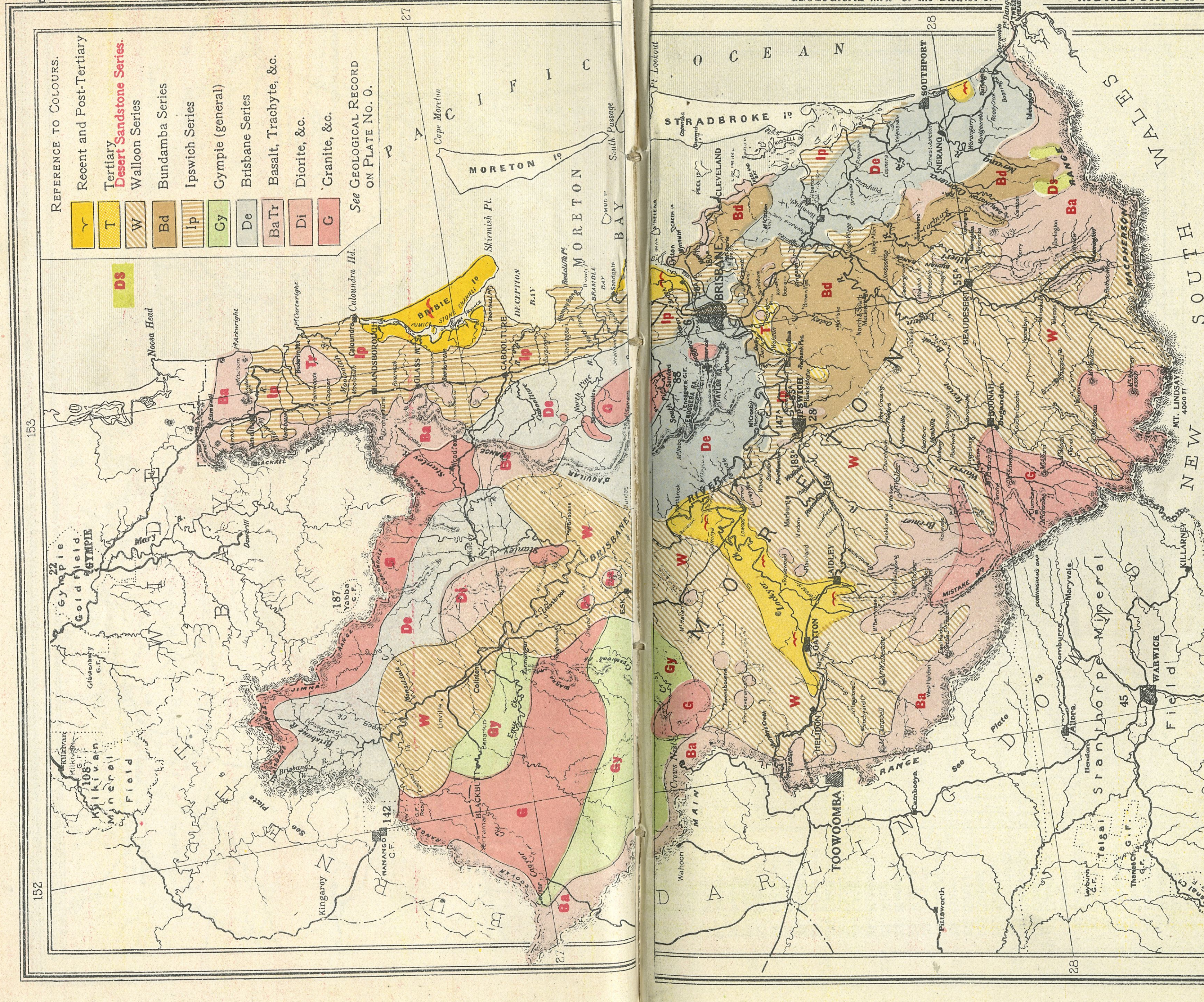
Scales 0 23½ 53 Miles
72 Kilometres


MORETON
COUNTIES.
Canning
Cavendish
Churchill
Stanley
Ward
PACIFIC OCEAN
MORETON BAY
MORETON Id
STRADBROKE Id
BRIBIE Id
DECEPTION BAY
BRAMBLE BAY
CANNING
CAVENDISH
CHURCHILL
STANLEY
WARD
MORETON
WIDE BAY
BURNETT
DARLING DOWNS
NEW SOUTH WALES
BRISBANE
IPSWICH
CLEVELAND
SOUTHPORT
BEAUDESERT
CABOOLTURE
LANDSBOROUGH
GLASS MTS
CALOUNDRA
GYMPIE
Gympie Gold Field
Yabba G.F. 187
Kilkivan Mineral Field 108
NANANGO G.F.
BLACKBUTT
ESK
LAIDLEY
GATTON
HELIDON
TOOWOOMBA
WARWICK
Allora
Killarney
Stanthorpe Mineral Field
Kingaroy
Pittsworth
Cambooya
Noosa Head
Cape Moreton
Pt. Lookout
MAIN RANGE
MACPHERSON RANGE
MT. LINDSAY 4000 FT
See Plate
27
28
152
153
22
142
183A
164
147A
28
88
45
55A
Scales
0 18 36 Miles
0 17 34 Kilometres

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

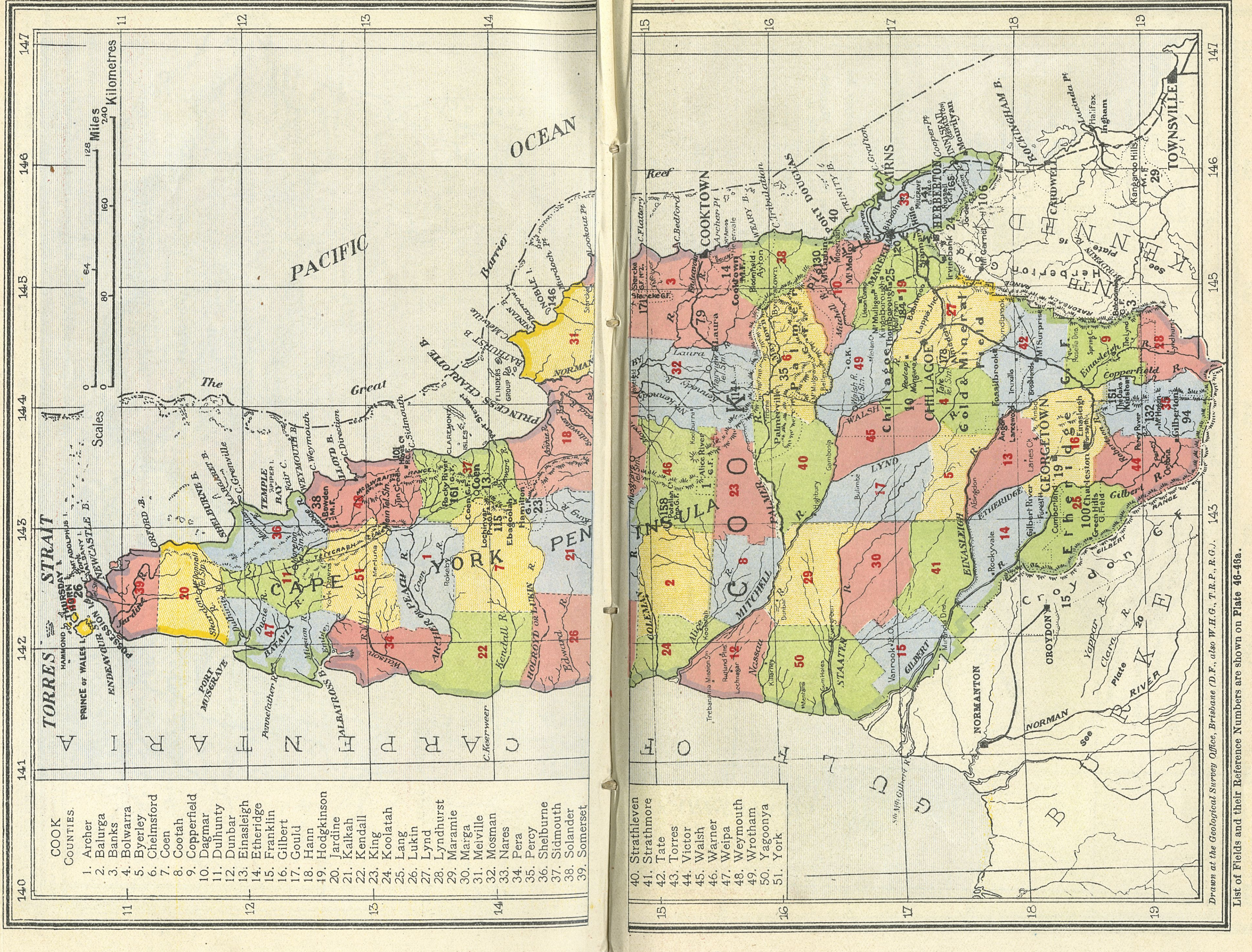
List of Fields and their Reference Numbers are shown on Plate 46-46a.

GEOLOGICAL MAP of the District of MORETON. Pl. 7.


Reference to Colours.
Recent and Post-Tertiary
T Tertiary
Ds Desert Sandstone Series.
W Walloon Series
Bd Bundamba Series
Ip Ipswich Series
Gy Gympie (general)
De Brisbane Series
Ba Tr Basalt, Trachyte, &c.
Di Diorite, &c.
G Granite, &c.
See Geological Record on Plate No. 0.
Pacific Ocean
Moreton Bay
Moreton Id
Stradbroke Id
Bribie Id
Brisbane
Ipswich
Southport
Beaudesert
Boonah
Laidley
Gatton
Helidon
Toowoomba
Warwick
Esk
Gympie
Kingaroy
Killarney
Mt. Lindsay 4000 Ft
Macpherson Range
Main Range
New South Wales
Moreton
Darling Downs
Burnett
Wide Bay
Scales
Miles
Kilometres
152
153
27
28

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

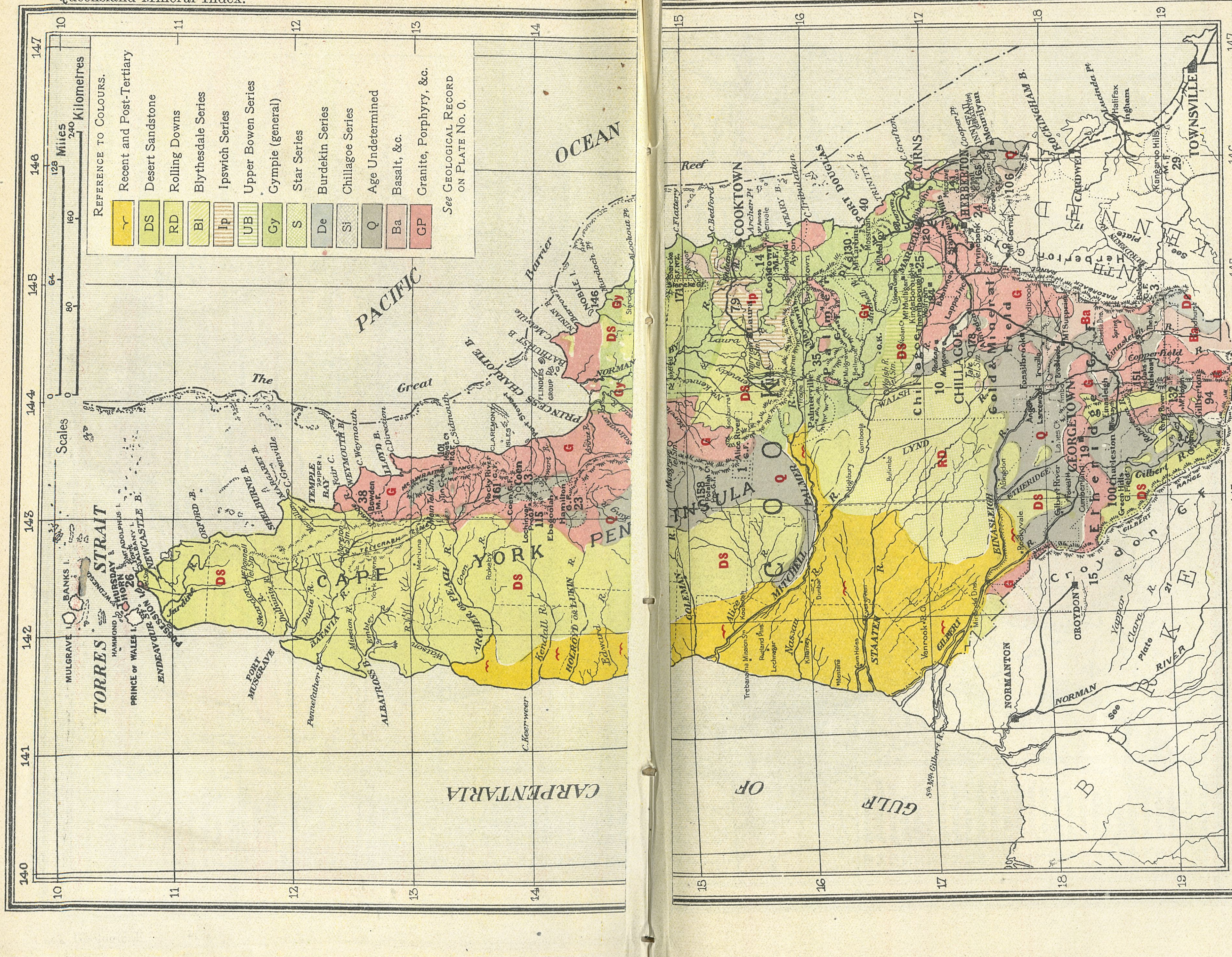

Scales
Miles 0 64 128
Kilometres 0 80 160 240
TORRES STRAIT
PACIFIC OCEAN
The Great Barrier Reef
CARPENTARIA
GULF
CAPE YORK PENINSULA
COOK
BURKE
KENNEDY
COOKTOWN
CAIRNS
PORT DOUGLAS
HERBERTON
CHILLAGOE
GEORGETOWN
CROYDON
NORMANTON
TOWNSVILLE
CARDWELL
INGHAM
THURSDAY I.
PRINCE OF WALES I.
NEWCASTLE B.
PORT MUSGRAVE
Palmer Gold Field
Chillagoe Gold & Mineral Field
Etheridge Gold Field
Croydon G.F.
Hodgkinson G.F.
MITCHELL R.
GILBERT R.
NORMAN RIVER
STAATEN
ARCHER R.
COLEMAN R.
EINASLEIGH
ETHERIDGE
LYND
WALSH
PALMER
KENNEDY
NORMANBY
140 141 142 143 144 145 146 147
11 12 13 14 15 16 17 18 19

COOK
COUNTIES.
1. Archer
2. Balurga
3. Banks
4. Bolwarra
5. Byerley
6. Chelmsford
7. Coen
8. Cootah
9. Copperfield
10. Dagmar
11. Dulhunty
12. Dunbar
13. Einasleigh
14. Etheridge
15. Franklin
16. Gilbert
17. Gould
18. Hann
19. Hodgkinson
20. Jardine
21. Kalkah
22. Kendall
23. King
24. Koolatah
25. Lang
26. Lukin
27. Lynd
28. Lyndhurst
29. Maramie
30. Marga
31. Melville
32. Mosman
33. Nares
34. Pera
35. Percy
36. Shelburne
37. Sidmouth
38. Solander
39. Somerset
40. Strathleven
41. Strathmore
42. Tate
43. Torres
44. Victor
45. Walsh
46. Warner
47. Weipa
48. Weymouth
49. Wrotham
50. Yagoonya
51. York

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on Plate 46-46a.

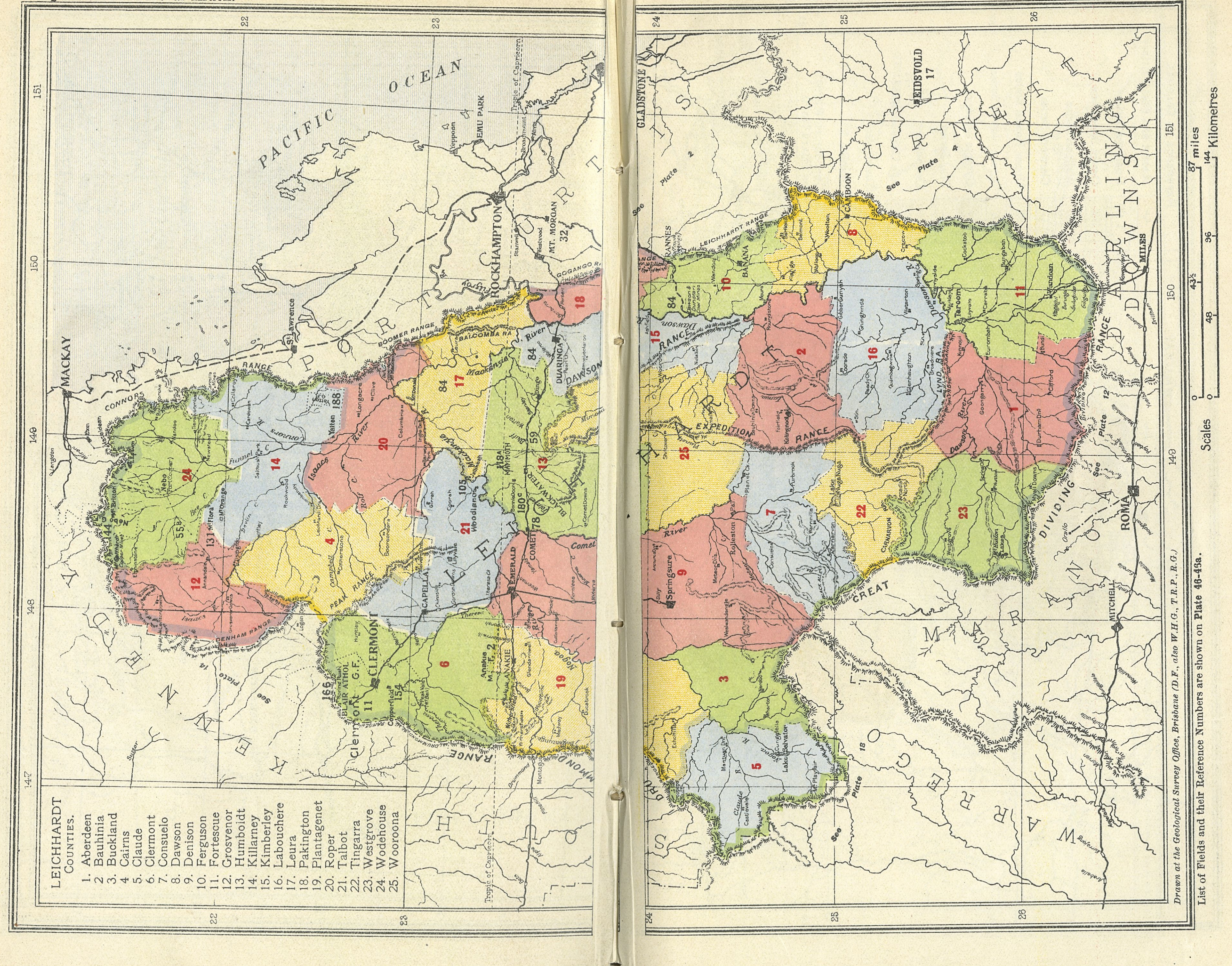
GEOLOGICAL MAP of the District of COOK, Pl. 9.


Reference to Colours.
Recent and Post-Tertiary
DS Desert Sandstone
RD Rolling Downs
Bl Blythesdale Series
Ip Ipswich Series
UB Upper Bowen Series
Gy Gympie (general)
S Star Series
De Burdekin Series
Si Chillagoe Series
Q Age Undetermined
Ba Basalt, &c.
GP Granite, Porphyry, &c.
See Geological Record on Plate No. 0.
Scales
Miles
Kilometres
PACIFIC
OCEAN
The Great Barrier Reef
CAPE YORK PENINSULA
GULF OF CARPENTARIA
TORRES STRAIT
COOK
COOKTOWN
CAIRNS
PORT DOUGLAS
HERBERTON
CHILLAGOE
GEORGETOWN
CROYDON
NORMANTON
TOWNSVILLE
CARDWELL
ROCKINGHAM B.
PRINCESS CHARLOTTE B.
MITCHELL
GILBERT
STAATEN
EINASLEIGH
NORMAN RIVER
Etheridge Gold Field
Chillagoe Mineral Field
Croydon
Kennedy
Burke

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.)

List of Fields and their Reference Numbers are shown on Plate 46-46a.

GEOGRAPHICAL MAP of the District of LEICHHARDT, Pl. 10.


PACIFIC OCEAN
MACKAY
St. Lawrence
ROCKHAMPTON
EMU PARK
Yeppoon
MT. MORGAN 32
GLADSTONE
EIDSVOLD 17
CAMBOON
MILES
ROMA
MITCHELL
CLERMONT
CAPELLA
EMERALD
ANAKIE
Springsure
Rolleston
Taroom
DUARINGA
Nebo
Clermont G.F.
BLAIR ATHOL
Copperfield
PORT CURTIS
BURNETT
DARLING DOWNS
MARANOA
WARREGO
KENNEDY
LEICHHARDT
CONNORS RANGE
BOOMER RANGE
DENHAM RANGE
PEAK RANGE
EXPEDITION RANGE
DAWSON RANGE
LEICHHARDT RANGE
GREAT DIVIDING RANGE
DRUMMOND RANGE
CARNARVON
Tropic of Capricorn
See Plate 2
See Plate 4
See Plate 12
See Plate 14
See Plate 18
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
22
23
24
25
26
147
148
149
150
151
Scales
87 miles
144 Kilometres

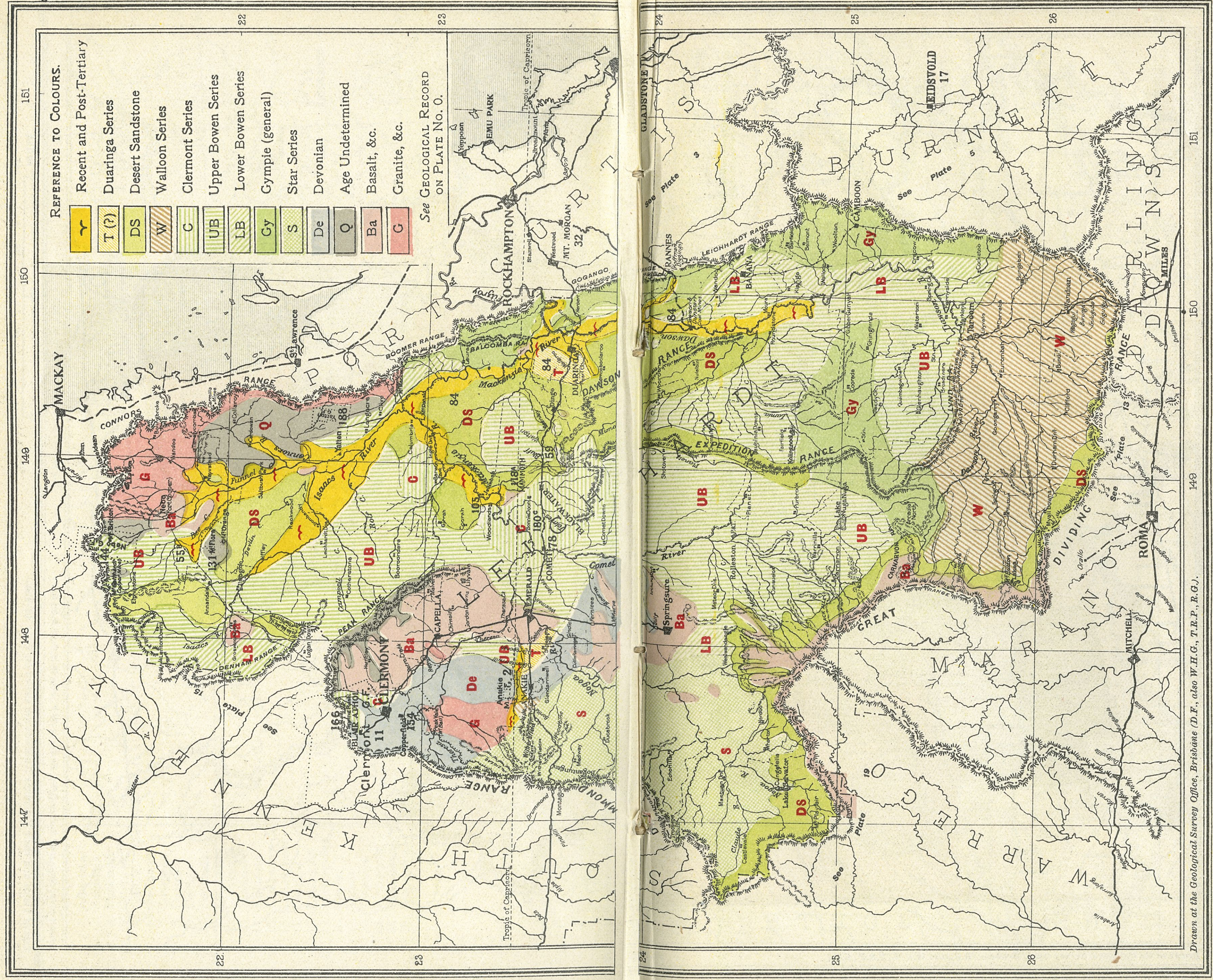
LEICHHARDT
COUNTIES.

1. Aberdeen
2. Bauhinia
3. Buckland
4. Cairns
5. Claude
6. Clermont
7. Consuelo
8. Dawson
9. Denison
10. Ferguson
11. Fortescue
12. Grosvenor
13. Humboldt
14. Killarney
15. Kimberley
16. Labouchere
17. Leura
18. Pakington
19. Plantagenet
20. Roper
21. Talbot
22. Tingarra
23. Westgrove
24. Wodehouse
25. Wooroona

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.)

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

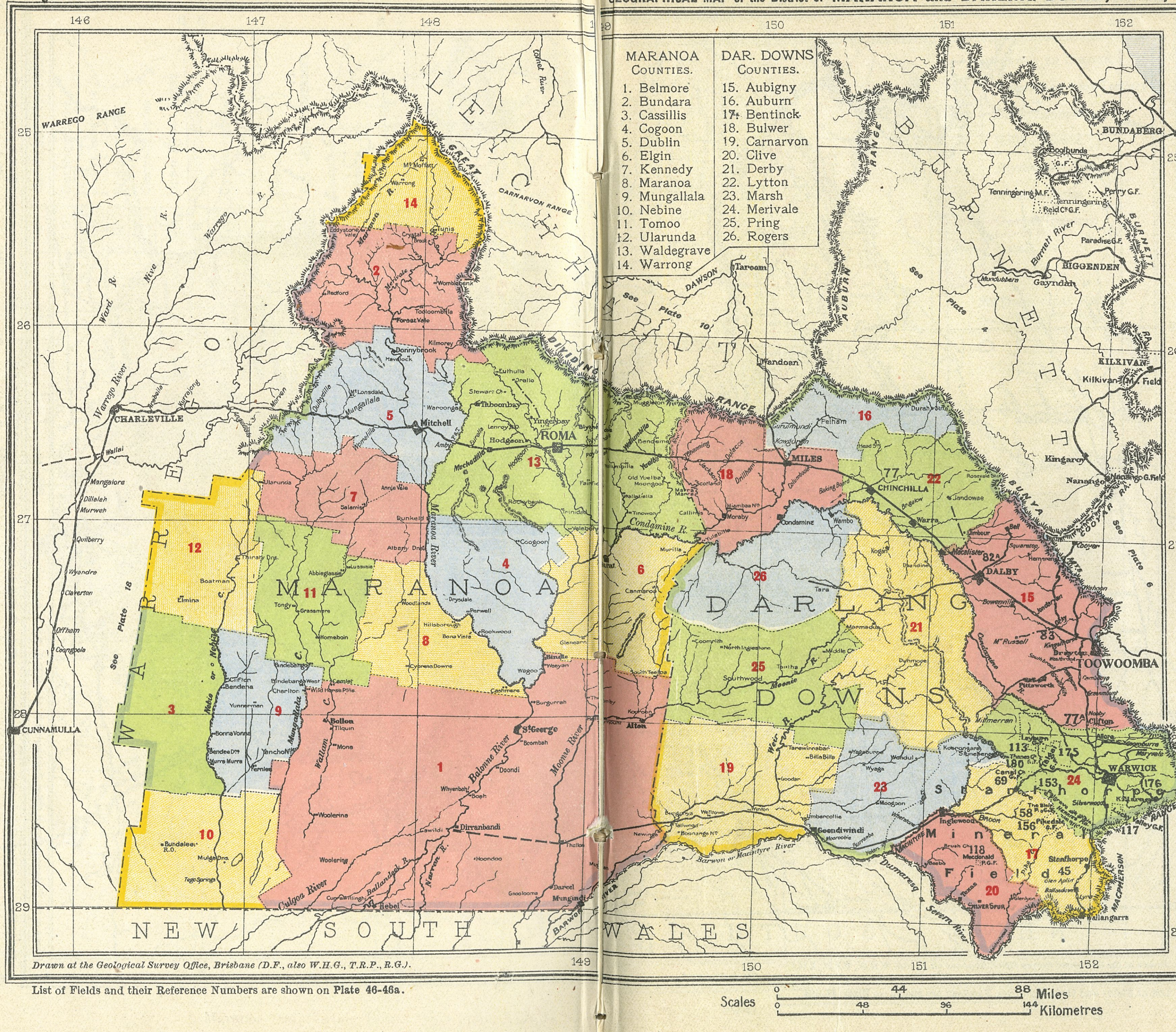
GEOLOGICAL MAP of the District of LEICHHARDT. Pl. 11.


REFERENCE TO COLOURS.
Recent and Post-Tertiary
T (?) Duaringa Series
DS Desert Sandstone
W Walloon Series
C Clermont Series
UB Upper Bowen Series
LB Lower Bowen Series
Gy Gympie (general)
S Star Series
De Devonian
Q Age Undetermined
Ba Basalt, &c.
G Granite, &c.
See GEOLOGICAL RECORD ON PLATE No. 0.
MACKAY
ROCKHAMPTON
GLADSTONE
EIDSVOLD 17
CAMBOON
BANANA
TAROOM
ROMA
MITCHELL
MILES
CLERMONT
CAPELLA
EMERALD
ANAKIE
SPRINGSURE
DUARINGA
BLACKWATER
COMET
MT. MORGAN 32
GOGANGO
ST. LAWRENCE
EMU PARK
Yeppoon
PORT CURTIS
LEICHHARDT
BURNETT
DARLING DOWNS
MARANOA
WARREGO
KENNEDY
SOUTH KENNEDY
CONNORS RANGE
BOOMER RANGE
BALCOMBA RANGE
DAWSON RANGE
EXPEDITION RANGE
PEAK RANGE
DENHAM RANGE
DRUMMOND RANGE
GREAT DIVIDING RANGE
LEICHHARDT RANGE
Mackenzie River
Isaacs River
Dawson River
Comet
Nogoa
Tropic of Capricorn
See Plate
Scales
Miles
Kilometres
21 22 23 24 25 26
147 148 149 150 151

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.J.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

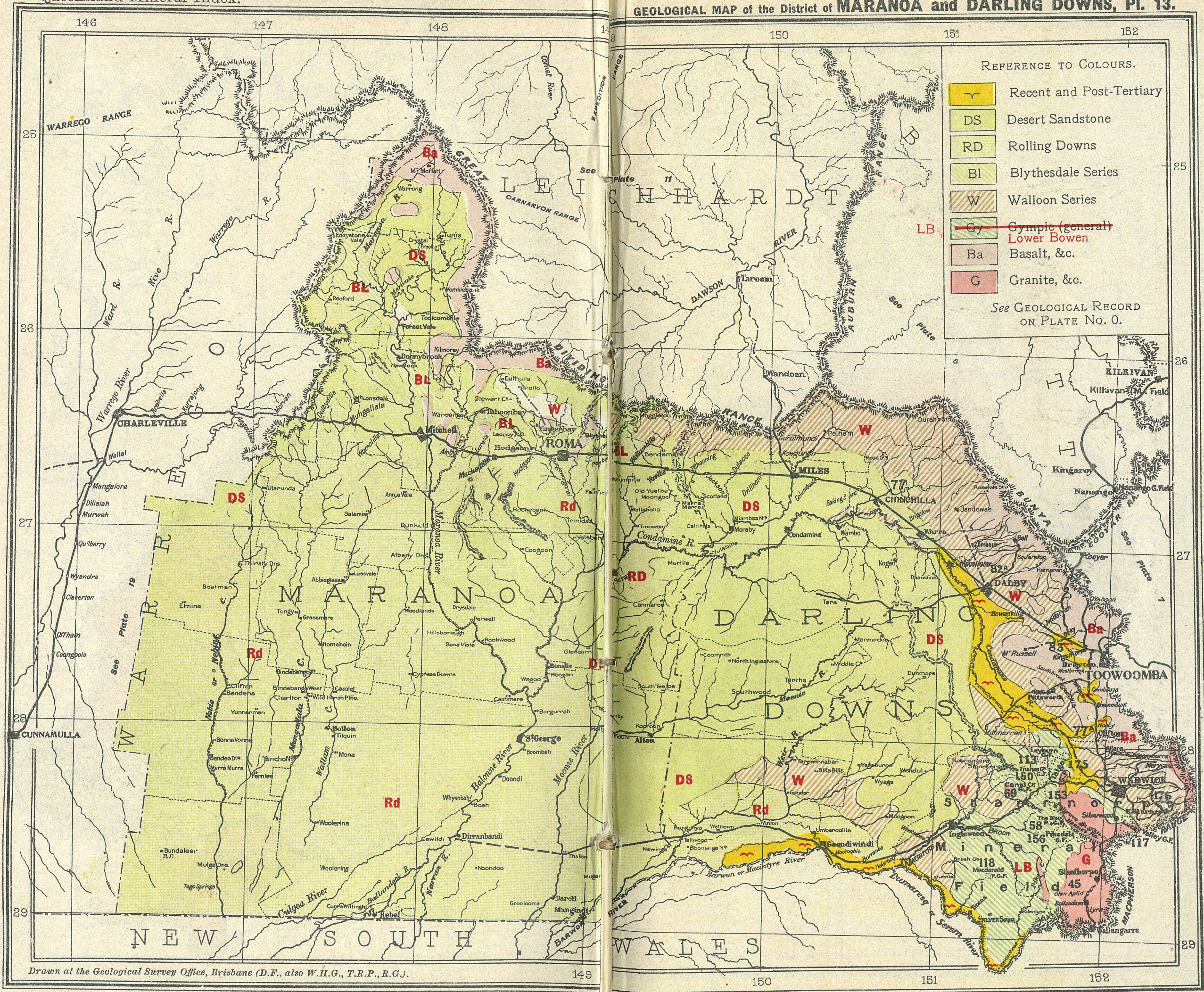
GEOGRAPHICAL MAP of the District of MARANOA and DARLING DOWNS, Pl. 12,


MARANOA
COUNTIES.
1. Belmore
2. Bundara
3. Cassillis
4. Cogoon
5. Dublin
6. Elgin
7. Kennedy
8. Maranoa
9. Mungallala
10. Nebine
11. Tomoo
12. Ularunda
13. Waldegrave
14. Warrong
DAR. DOWNS
COUNTIES.
15. Aubigny
16. Auburn
17. Bentinck
18. Bulwer
19. Carnarvon
20. Clive
21. Derby
22. Lytton
23. Marsh
24. Merivale
25. Pring
26. Rogers
146
147
148
149
150
151
152
25
26
27
28
29
WARREGO RANGE
LEICHHARDT
GREAT CARNARVON RANGE
DIVIDING RANGE
BURNETT
AUBURN RANGE
DAWSON
See Plate 10
See Plate 4
See Plate 6
See Plate 18
WARREGO
MARANOA
DARLING DOWNS
Stanthorpe Mineral Field
NEW SOUTH WALES
MACPHERSON RANGE
BUNYA
COOYAR RA.
BURNETT RA.
CHARLEVILLE
CUNNAMULLA
Warrego River
Ward R.
Nive R.
Wallal
Mangalore
Dillalah
Murweh
Quilberry
Wyandra
Claverton
Offham
Coongoola
Mt Moffatt
Warrong
Eddystone
Tunis
Crystal Brook
Redford
Womblebank
Tooloombilla
Forest Vale
Kilmorey
Donnybrook
Havelock
Mt Lonsdale
Mungallala
Mitchell
Amby
Waroonga
Euthulla
Orallo
Stewart Ck
Taboonbay
Yingerbay
Hodgson
ROMA
Lenroy
Ularunda
Annie Vale
Salamis
Dunkeld
Albany Dns
Maranoa River
Cogoon
Thirsty Dns
Boatman
Elmina
Abbieglassie
Lussvale
Tongy
Grassmere
Homeboin
Woodlands
Hillsborough
Bona Vista
Drysdale
Perwell
Rookwood
Cypress Downs
Wagoo
Bindebango
Clifton
Bendena
Charlton
Camler
Wild Horse Plns
Yunnerman
Bonna Vonna
Bendee Dn
Murra Murra
Yancho
Fernlee
Bollon
Tilquin
Mona
Wallam Ck
Cashmere
Burgurrah
St George
Boombah
Doondi
Whyenbah
Bosh
Balonne River
Moonie River
Woolerina
Dirranbandi
Woolering
Hoondoo
Cawildi
Narran R.
Culgoa River
Cuy-willingh
Ballandool R.
Rebel
Mungindi
Dareel
Gnoolooma
Thallon
Bundaleer
Mulga Dns
Tego Springs
Muggleton
Bendemere
Yuelba
Condamine R.
Tinowon
Wallumbilla
Old Yuelba
Moongool
Miles
Wandoan
Taroom
Gurulmundi
Felham
Durah
Kowguran
Columboola
Baking Board
Chinchilla
Warra
Jandowae
Condamine
Wambo
Moraby
Murilla
Surat
Canmaroo
Glenearn
Tara
Kogan
Dalby
Macalister
Jimbour
Bell
Cooyar
Squaretop
Bowenville
Jondaryan
Mt Russell
Oakey
TOOWOOMBA
Drayton
Pittsworth
Cambooya
Nobby
Clifton
Greenmount
Millmerran
Leyburn
Allora
Goomburra
Maryvale
WARWICK
Killarney
Coomrith
North Inglestone
Southwood
Tartha
Moonie R.
Weir R.
Alton
Kooroon
Tarewinnabar
Billa Billa
Goodar
Wyaga
Moogoon
Umbercollie
Goondiwindi
Bungunya
Welltown
Tallwood
Boonanga
Newinga
Barwon or Macintyre River
Inglewood
Texas
Silver Spur
Glenlyon
Stanthorpe
Glen Aplin
Ballandean
Wallangarra
Dumaresq or Severn River
Pikedale
Sugarloaf
Lucky Valley G.F.
BUNDABERG
Boolbunda G.F.
Perry G.F.
Tenningering M.F.
Reid Ck G.F.
Burnett River
Paradise G.F.
BIGGENDEN
Gayndah
Mundubbera
KILKIVAN
Kilkivan M. Field
Kingaroy
Nanango
Nanango G. Field
14
2
5
13
7
12
4
6
11
8
3
9
10
1
16
18
22
26
21
15
25
19
23
24
17
20
77
82A
83
113
175
180
69
153
176
58
156
117
118
45
Scales
0
44
88
Miles
0
48
96
144
Kilometres

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

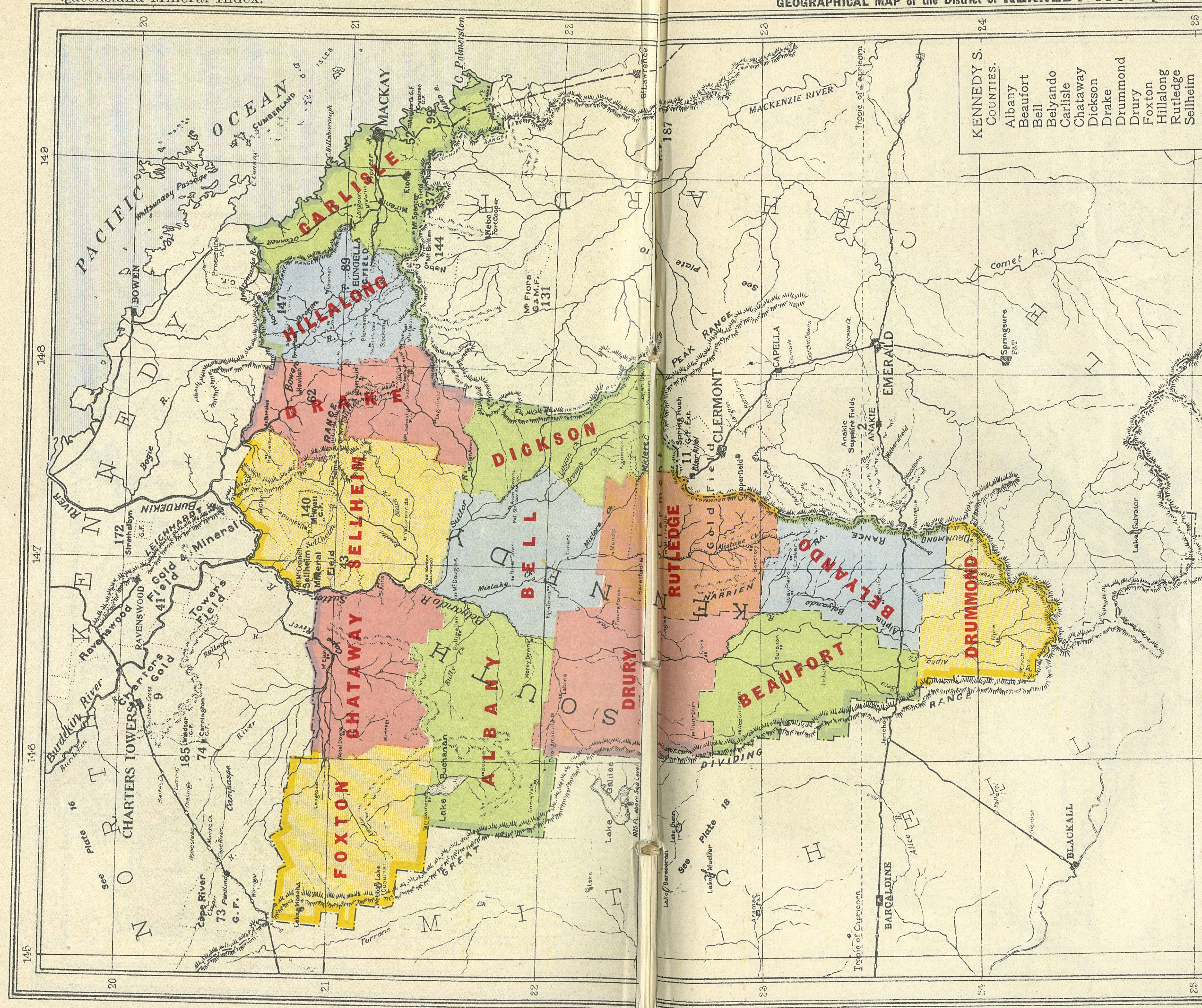
GEOLOGICAL MAP of the District of **MARANOA and DARLING DOWNS, Pl. 13.**


REFERENCE TO COLOURS.
Recent and Post-Tertiary
DS Desert Sandstone
RD Rolling Downs
Bl Blythesdale Series
W Walloon Series
LB ~~Gy Gympie (general)~~ Lower Bowen
Ba Basalt, &c.
G Granite, &c.
See GEOLOGICAL RECORD ON PLATE No. 0.
146
147
148
149
150
151
152
25
26
27
28
29
WARREGO RANGE
GREAT DIVIDING RANGE
CARNARVON RANGE
EXPEDITION RANGE
AUBURN RANGE
BUNYA RA.
COOYAR RA.
MACPHERSON RANGE
LEICHHARDT
MARANOA
DARLING DOWNS
WARREGO
BURNETT
Stanthorpe Mineral Field
NEW SOUTH WALES
See Plate 11
See Plate 5
See Plate 7
See Plate 19
CHARLEVILLE
CUNNAMULLA
Mitchell
ROMA
MILES
CHINCHILLA
Taroom
Wandoan
DALBY
TOOWOMBA
WARWICK
KILKIVAN
Kilkivan (M.) Field
Kingaroy
Nanango
Nanango G. Field
St George
Goondiwindi
Dirranbandi
Inglewood
Stanthorpe
Wallangarra
Mungindi
Surat
Condamine R.
Balonne River
Maranoa River
Moonie R.
Dawson River
Warrego River
Culgoa River
Barwon or Macintyre River
Dumaresq R.
Severn River
DS
BL
Ba
W
Rd
RD
LB
G
77
82A
83
113
150
59
153
58
156
118
45
117
175
176
Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on Plate 46-46a.

Scales 0 44 88 Miles
0 48 96 144 Kilometres

GEOGRAPHICAL MAP of the District of KENNEDY SOUTH, Pl. 14,


KENNEDY S.
COUNTIES.
Albany
Beaufort
Bell
Belyando
Carlisle
Chataway
Dickson
Drake
Drummond
Drury
Foxton
Hillalong
Rutledge
Sellheim
PACIFIC OCEAN
CUMBERLAND ISLES
Whitsunday Passage
MACKAY
BOWEN
CHARTERS TOWERS
RAVENSWOOD
CLERMONT
EMERALD
CAPELLA
ANAKIE
BARCALDINE
BLACKALL
St. Lawrence
MACKENZIE RIVER
Comet R.
PEAK RANGE
DRUMMOND RANGE
GREAT DIVIDING RANGE
BURDEKIN RIVER
Tropic of Capricorn
CARLISLE
HILLALONG
DRAKE
SELLHEIM
DICKSON
BELL
RUTLEDGE
BELYANDO
DRUMMOND
BEAUFORT
DRURY
ALBANY
CHATAWAY
FOXTON
NORTH KENNEDY
LEICHHARDT
MITCHELL
SOUTH KENNEDY
Charters Towers Gold Field
Ravenswood Gold Field
Cape River G. F.
Clermont Gold Field
Anakie Sapphire Fields
Eungella G. Field
Sellheim Mineral Field
See Plate 10
See Plate 16
See Plate 18
Lake Buchanan
Lake Galilee
Springsure
Nebo
Mt Flora G.&M.F.
147
89
62
140
43
172
41
9
185
74
73
187
52
92
137
144
131
11
2
20
21
22
23
24
25
145
146
147
148
149

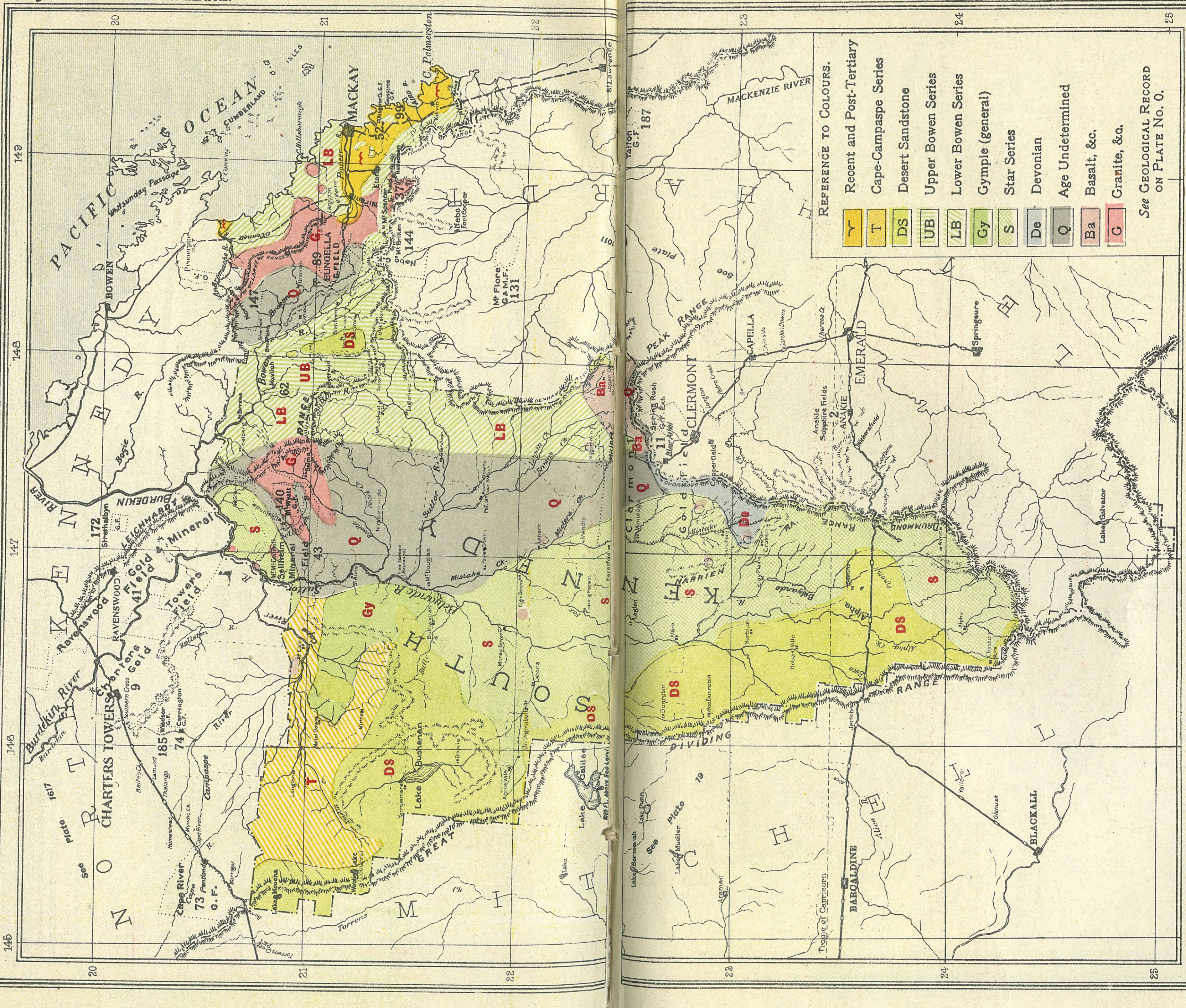
Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a**.

Scales

0 40 80 Miles

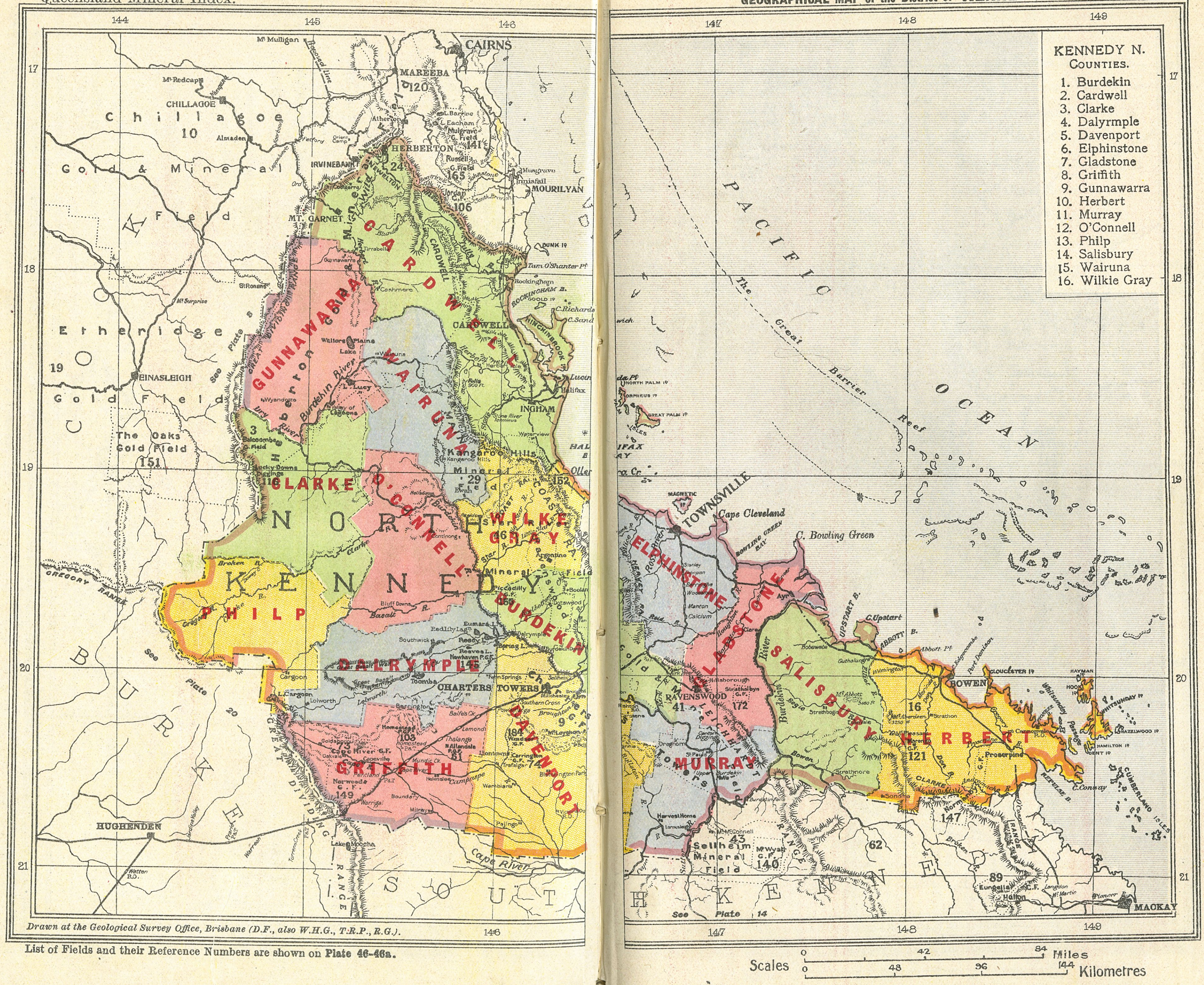
0 48 96 144 Kilometres


REFERENCE TO COLOURS.
Y Recent and Post-Tertiary
T Cape-Campaspe Series
DS Desert Sandstone
UB Upper Bowen Series
LB Lower Bowen Series
Gy Gympie (general)
S Star Series
De Devonian
Q Age Undetermined
Ba Basalt, &c.
G Granite, &c.
See Geological Record on Plate No. O.
Scales
0 40 80 Miles
0 48 96 144 Kilometres
PACIFIC OCEAN
MACKAY
BOWEN
CLERMONT
EMERALD
CAPELLA
ANAKIE
Springsure
BLACKALL
BARCALDINE
CHARTERS TOWERS
RAVENSWOOD
Lake Buchanan
Lake Galilee
MACKENZIE RIVER
BURDEKIN RIVER
PEAK RANGE
DRUMMOND RANGE
GREAT DIVIDING RANGE
KENNEDY SOUTH
NORTH KENNEDY
LEICHHARDT
MITCHELL
Nebo
Mt Britton 144
Eungella G. Field 89
Mt Flora G. & M.F. 131
Yatton G.F. 187
Clermont Gold Field 11
Anakie Sapphire Fields 2
Ravenswood Gold & Mineral Field 41
Charters Towers Gold Field 9
Cape River G.F. 73
Leichhardt Gold & Mineral Field 43
Tropic of Capricorn
See Plate 19
See Plate 1617
See Plate 1011

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., E.G.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

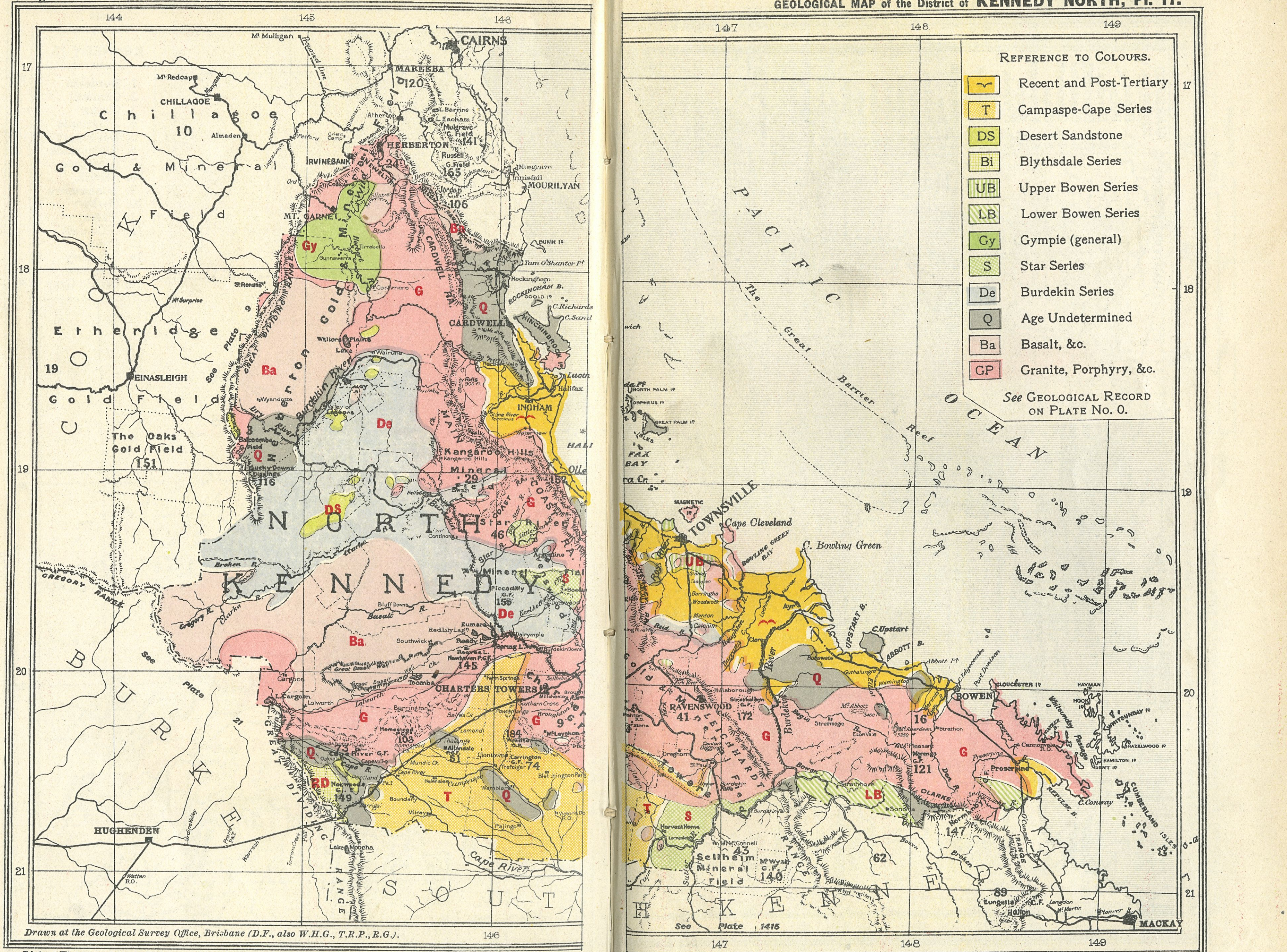
GEOGRAPHICAL MAP of the District of KENNEDY NORTH, Pl. 16.


144
145
146
147
148
149
17
18
19
20
21
KENNEDY N.
COUNTIES.
1. Burdekin
2. Cardwell
3. Clarke
4. Dalyrmple
5. Davenport
6. Elphinstone
7. Gladstone
8. Griffith
9. Gunnawarra
10. Herbert
11. Murray
12. O'Connell
13. Philp
14. Salisbury
15. Wairuna
16. Wilkie Gray
PACIFIC OCEAN
The Great Barrier Reef
CAIRNS
MAREEBA
CHILLAGOE
Chillagoe Gold & Mineral Field
10
HERBERTON
IRVINEBANK
MOURILYAN
MT. GARNET
CARDWELL
INGHAM
TOWNSVILLE
Cape Cleveland
C. Bowling Green
C. Upstart
BOWEN
MACKAY
RAVENSWOOD
CHARTERS TOWERS
HUGHENDEN
EINASLEIGH
Etheridge Gold Field
19
The Oaks Gold Field
151
Kangaroo Hills Mineral Field
29
Sellheim Mineral Field
GUNNAWARRA
CARDWELL
WAIRUNA
CLARKE
O'CONNELL
WILKIE GRAY
PHILP
BURDEKIN
DALRYMPLE
GRIFFITH
DAVENPORT
ELPHINSTONE
GLADSTONE
SALISBURY
MURRAY
HERBERT
NORTH KENNEDY
SOUTH KENNEDY
COOK
BURKE
GREAT DIVIDING RANGE
Scales
0 42 84 Miles
0 48 96 144 Kilometres

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

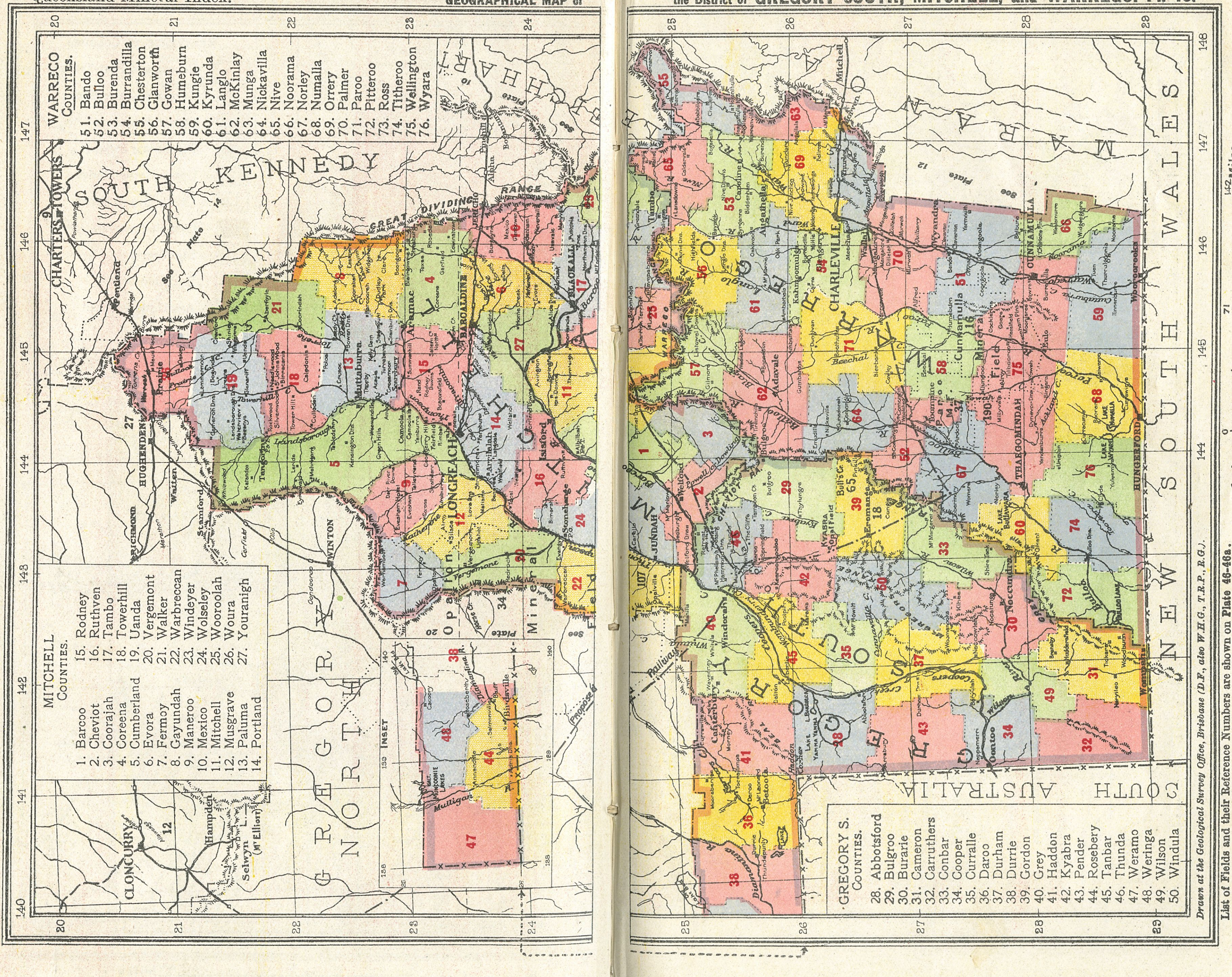
GEOLOGICAL MAP of the District of KENNEDY NORTH, Pl. 17.


REFERENCE TO COLOURS.
🟨 Recent and Post-Tertiary
T Campaspe-Cape Series
DS Desert Sandstone
Bi Blythsdale Series
UB Upper Bowen Series
LB Lower Bowen Series
Gy Gympie (general)
S Star Series
De Burdekin Series
Q Age Undetermined
Ba Basalt, &c.
GP Granite, Porphyry, &c.
See Geological Record on Plate No. 0.
144
145
146
147
148
149
17
18
19
20
21
CAIRNS
MAREEBA
120
CHILLAGOE
Chillagoe 10
Gold & Mineral Field
HERBERTON
24
IRVINEBANK
MT. GARNET
165
106
MOURILYAN
Etheridge
19
EINASLEIGH
Gold Field
The Oaks Gold Field
151
116
CARDWELL
INGHAM
Kangaroo Hills Mineral Field
29
152
NORTH KENNEDY
46
155
145
CHARTERS TOWERS
9
103
51
184
74
149
HUGHENDEN
BURKE
COOK
PACIFIC OCEAN
The Great Barrier Reef
MAGNETIC I.
TOWNSVILLE
Cape Cleveland
C. Bowling Green
AYR
C. Upstart
RAVENSWOOD
41
172
43
BOWEN
16
121
147
PROSERPINE
62
Sellheim Mineral Field
140
89
MACKAY
SOUTH KENNEDY
Scales
0 42 84 Miles
0 48 96 144 Kilometres

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on Plate 46-46a.

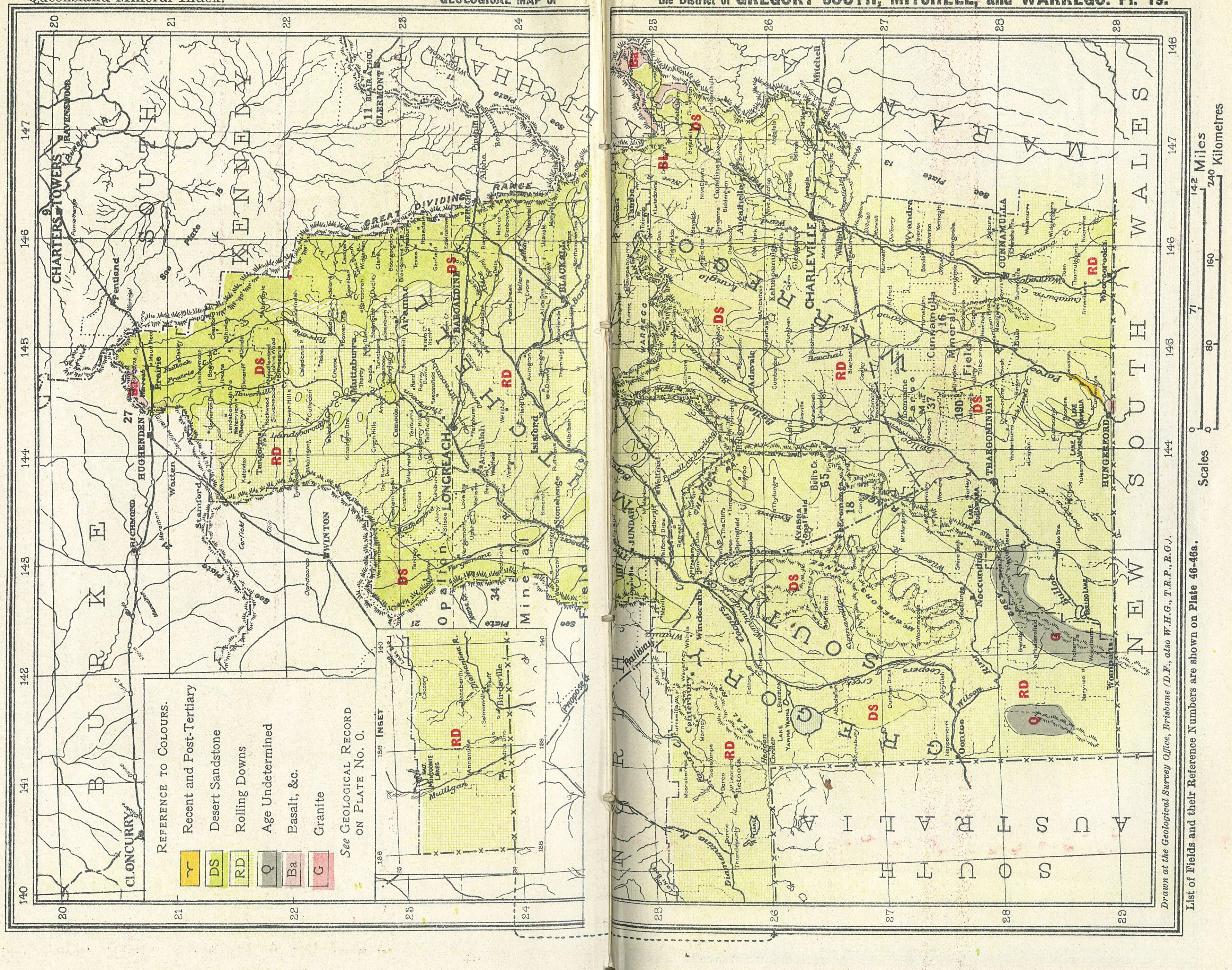
GEOGRAPHICAL MAP of the District of GREGORY SOUTH, MITCHELL, and WARREGO. Pl. 18.


WARREGO COUNTIES.
51. Bando
52. Bulloo
53. Burenda
54. Burrandilla
55. Chesterton
56. Glanworth
57. Gowan
58. Humeburn
59. Kungie
60. Kyrunda
61. Langlo
62. McKinlay
63. Munga
64. Nickavilla
65. Nive
66. Noorama
67. Norley
68. Nunalla
69. Orrery
70. Palmer
71. Paroo
72. Pitteroo
73. Ross
74. Titheroo
75. Wellington
76. Wyara
MITCHELL COUNTIES.
1. Barcoo
2. Cheviot
3. Coorajah
4. Coreena
5. Cumberland
6. Evora
7. Fermoy
8. Gayundah
9. Maneroo
10. Mexico
11. Mitchell
12. Musgrave
13. Paluma
14. Portland
15. Rodney
16. Ruthven
17. Tambo
18. Towerhill
19. Uanda
20. Vergemont
21. Walker
22. Warbreccan
23. Windeyer
24. Wolseley
25. Wooroolah
26. Woura
27. Youranigh
GREGORY S. COUNTIES.
28. Abbotsford
29. Bulgroo
30. Burarie
31. Cameron
32. Carruthers
33. Conbar
34. Cooper
35. Curralle
36. Daroo
37. Durham
38. Durrie
39. Gordon
40. Grey
41. Haddon
42. Kyabra
43. Pender
44. Rosebery
45. Tanbar
46. Thunda
47. Weramo
48. Weringa
49. Wilson
50. Windula
SOUTH KENNEDY
GREAT DIVIDING RANGE
GREGORY NORTH
NEW SOUTH WALES
SOUTH AUSTRALIA
MARANOA
LEICHHARDT
INSET
CHARTERS TOWERS
HUGHENDEN
RICHMOND
CLONCURRY
WINTON
LONGREACH
BARCALDINE
ARAMAC
MUTTABURRA
JERICHO
BLACKALL
ISISFORD
TAMBO
CHARLEVILLE
CUNNAMULLA
THARGOMINDAH
HUNGERFORD
JUNDAH
WINDORAH
ADAVALE
EROMANGA
BIRDSVILLE
BETOOTA
KYABRA Opal Field
Opalton Mineral Field
Cunnamulla Mineral Field
Toompine Opal Field
Railway
See Plate 14
See Plate 20
See Plate 12
20
21
22
23
24
25
26
27
28
29
140
141
142
143
144
145
146
147
148
Scales
Miles 142
Kilometres 240

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on Plate 46-46a.

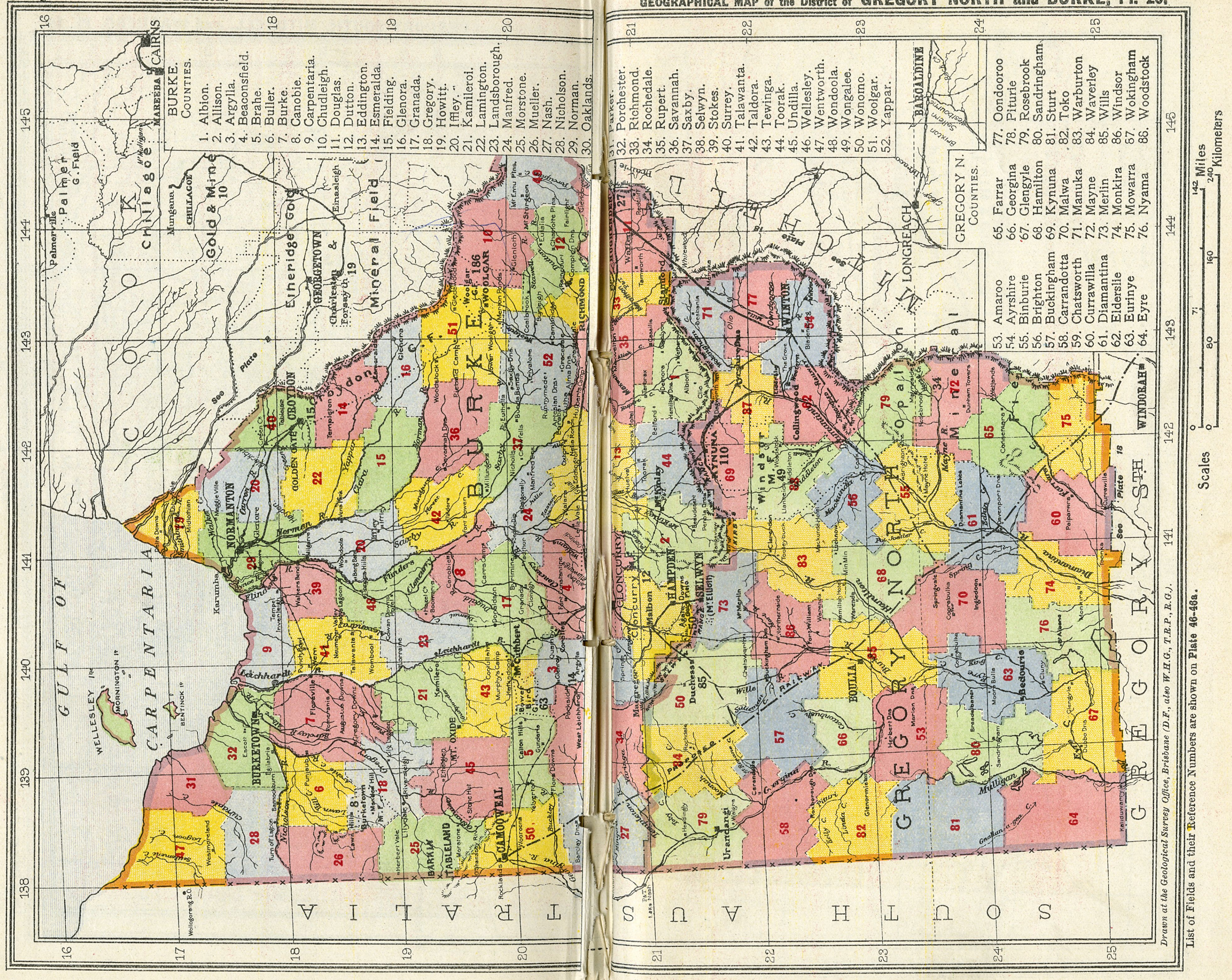
GEOLOGICAL MAP of the District of GREGORY SOUTH, MITCHELL, and WARREGO. Pl. 19.


Reference to Colours.
Y Recent and Post-Tertiary
DS Desert Sandstone
RD Rolling Downs
Q Age Undetermined
Ba Basalt, &c.
G Granite
See Geological Record on Plate No. 0.
Inset
Scales
0 71 142 Miles
0 80 160 240 Kilometres
CHARTERS TOWERS
HUGHENDEN
RICHMOND
CLONCURRY
WINTON
LONGREACH
BARCALDINE
BLACKALL
ISISFORD
CHARLEVILLE
CUNNAMULLA
THARGOMINDAH
HUNGERFORD
JUNDAH
BURKE
SOUTH KENNEDY
MITCHELL
WARREGO
GREGORY SOUTH
GREGORY NORTH
MARANOA
NEW SOUTH WALES
SOUTH AUSTRALIA

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on Plate 46-46a.

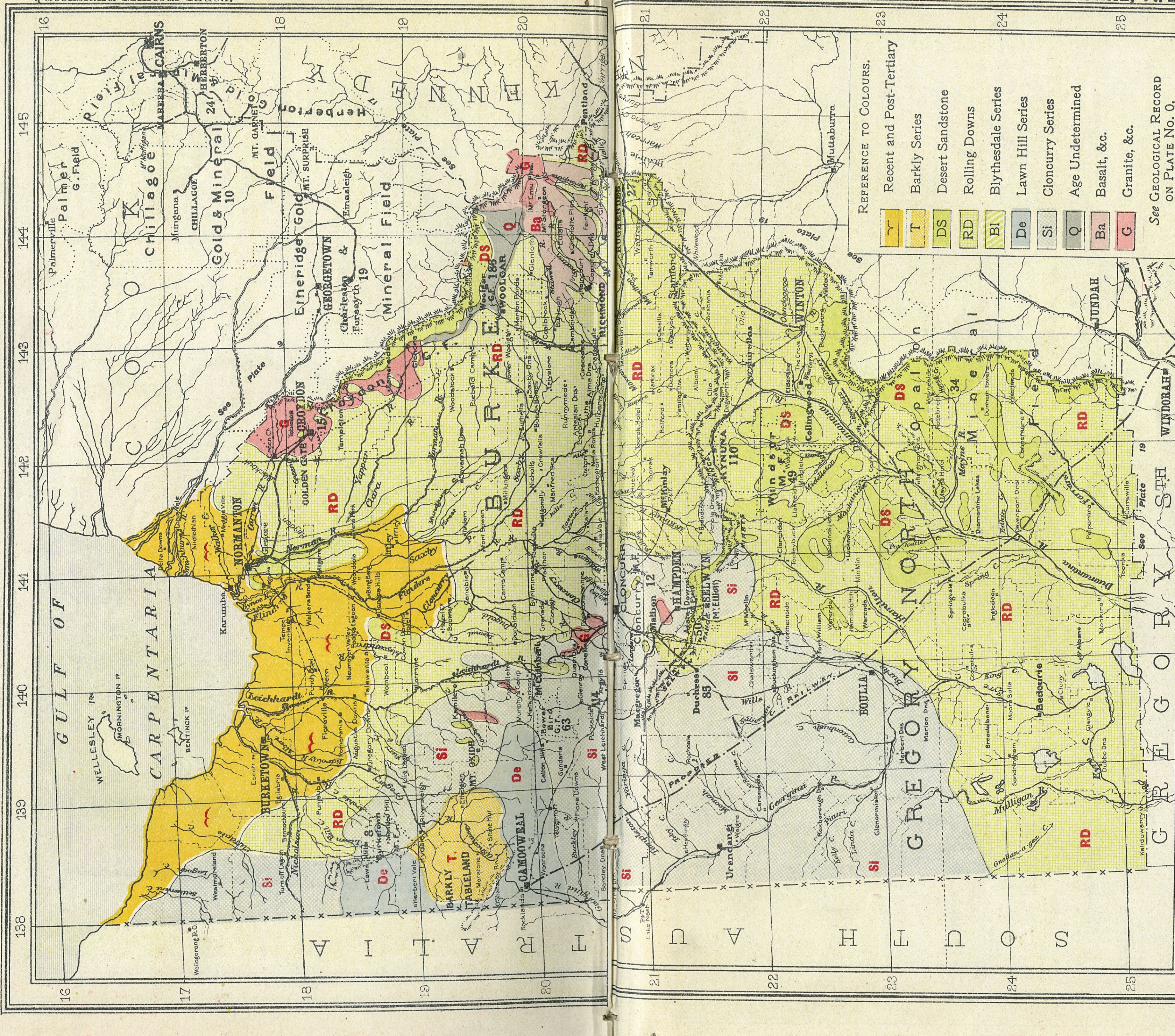
GEOGRAPHICAL MAP of the District of GREGORY NORTH and BURKE, Pl. 20.


BURKE.
COUNTIES.
1. Albion.
2. Allison.
3. Argylla.
4. Beaconsfield.
5. Brahe.
6. Buller.
7. Burke.
8. Canobie.
9. Carpentaria.
10. Chudleigh.
11. Douglas.
12. Dutton.
13. Eddington.
14. Esmeralda.
15. Fielding.
16. Glenora.
17. Granada.
18. Gregory.
19. Howitt.
20. Iffley.
21. Kamileroi.
22. Lamington.
23. Landsborough.
24. Manfred.
25. Morstone.
26. Mueller.
27. Nash.
28. Nicholson.
29. Norman.
30. Oaklands.
31. Parker.
32. Porchester.
33. Richmond.
34. Rochedale.
35. Rupert.
36. Savannah.
37. Saxby.
38. Selwyn.
39. Stokes.
40. Surrey.
41. Talawanta.
42. Taldora.
43. Tewinga.
44. Toorak.
45. Undilla.
46. Wellesley.
47. Wentworth.
48. Wondoola.
49. Wongalee.
50. Wonomo.
51. Woolgar.
52. Yappar.
GREGORY N.
COUNTIES.
53. Amaroo.
54. Ayrshire.
55. Binburie.
56. Brighton.
57. Buckingham.
58. Carrandotta.
59. Chatsworth.
60. Currawilla.
61. Diamantina.
62. Elderslie.
63. Eurinye.
64. Eyre.
65. Farrar.
66. Georgina.
67. Glengyle.
68. Hamilton.
69. Kynuna.
70. Malwa.
71. Manuka.
72. Mayne.
73. Merlin.
74. Monkira.
75. Mowarra.
76. Nyama.
77. Oondooroo.
78. Pituri.
79. Rosebrook.
80. Sandringham.
81. Sturt.
82. Toko.
83. Warburton.
84. Waverley.
85. Wills.
86. Windsor.
87. Wokingham.
88. Woodstock.
GULF OF CARPENTARIA
WELLESLEY Is.
MORNINGTON I.
BENTINCK I.
BURKE
GREGORY NORTH
GREGORY STH.
SOUTH AUSTRALIA
COOK
MITCHELL
NORMANTON
BURKETOWN
CROYDON
GEORGETOWN
CLONCURRY
RICHMOND
HAMPDEN
SELWYN
DUCHESS
MT. CUTHBERT
MT. OXIDE
CAMOOWEAL
BOULIA
WINTON
KYNUNA
LONGREACH
BARCALDINE
WINDORAH
BEDOURIE
URANDANGI
CAIRNS
MAREEBA
CHILLAGOE
Gold & Mine 10
Chillagoe
Etheridge Gold & Mineral Field
Palmer G. Field
Woolgar G.F. 186
Croydon 15
Golden Gate
Charleston
Forsayth 19
Cloncurry 12
Malbon
Windsor M. 49
Kynuna 110
Opal Mine
Duchess 85
Burketown 8
Barkly Tableland
PACIFIC RAILWAY
Flinders R.
Leichhardt R.
Norman R.
Gilbert R.
Diamantina R.
Georgina R.
Mulligan R.
Hamilton R.
Burke R.
Wills R.
See Plate
Scales
Miles 0 71 142
Kilometers 0 80 160 240
16 17 18 19 20 21 22 23 24 25
138 139 140 141 142 143 144 145

Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.B.P., R.G.).

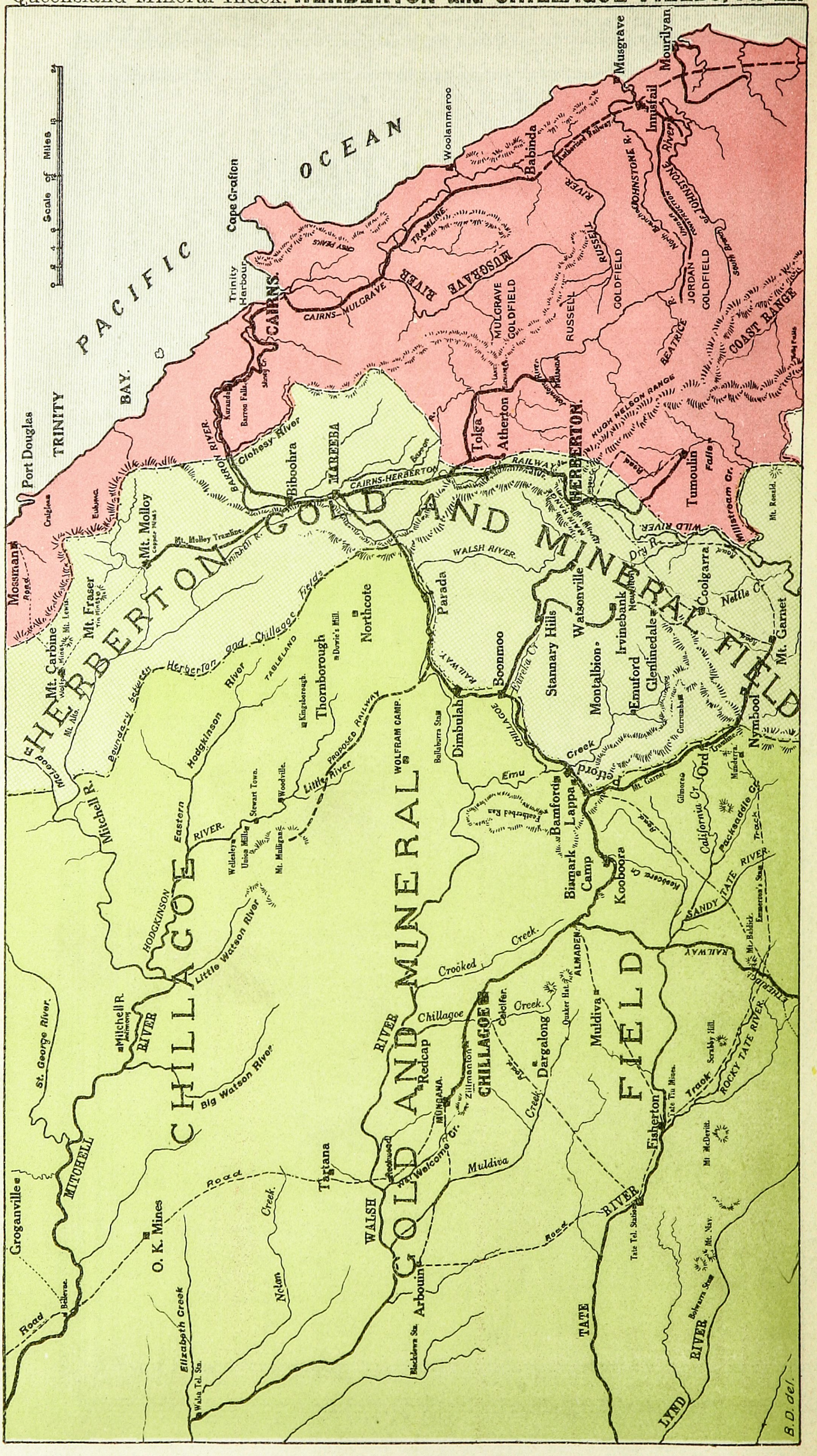
List of Fields and their Reference Numbers are shown on **Plate 46-46a.**

GEOLOGICAL MAP of the District of GREGORY NORTH and BURKE, Pl. 21.


REFERENCE TO COLOURS.
Y Recent and Post-Tertiary
T Barkly Series
DS Desert Sandstone
RD Rolling Downs
Bl Blythesdale Series
De Lawn Hill Series
Si Cloncurry Series
Q Age Undetermined
Ba Basalt, &c.
G Granite, &c.
See GEOLOGICAL RECORD ON PLATE No. 0.
Scales
Miles
Kilometers
GULF OF CARPENTARIA
BURKE
GREGORY NORTH
GREGORY SOUTH
KENNEDY
COOK
SOUTH AUSTRALIA
NORMANTON
BURKETOWN
CAMOOWEAL
CLONCURRY
HAMPDEN
SELWYN
BOULIA
URANDANGI
WINTON
KYNUNA
RICHMOND
HUGHENDEN
CROYDON
GEORGETOWN
CAIRNS
HERBERTON
CHILLAGOE
JUNDAH
WINDORAH
BARKLY TABLELAND
Etheridge Gold & Mineral Field 19
Chillagoe Gold & Mineral Field 10
Herberton Gold & Mineral Field 24
Opalton Mineral Field 34
Windsor M.F. 49
Cloncurry M.F. 12
Palmer G. Field

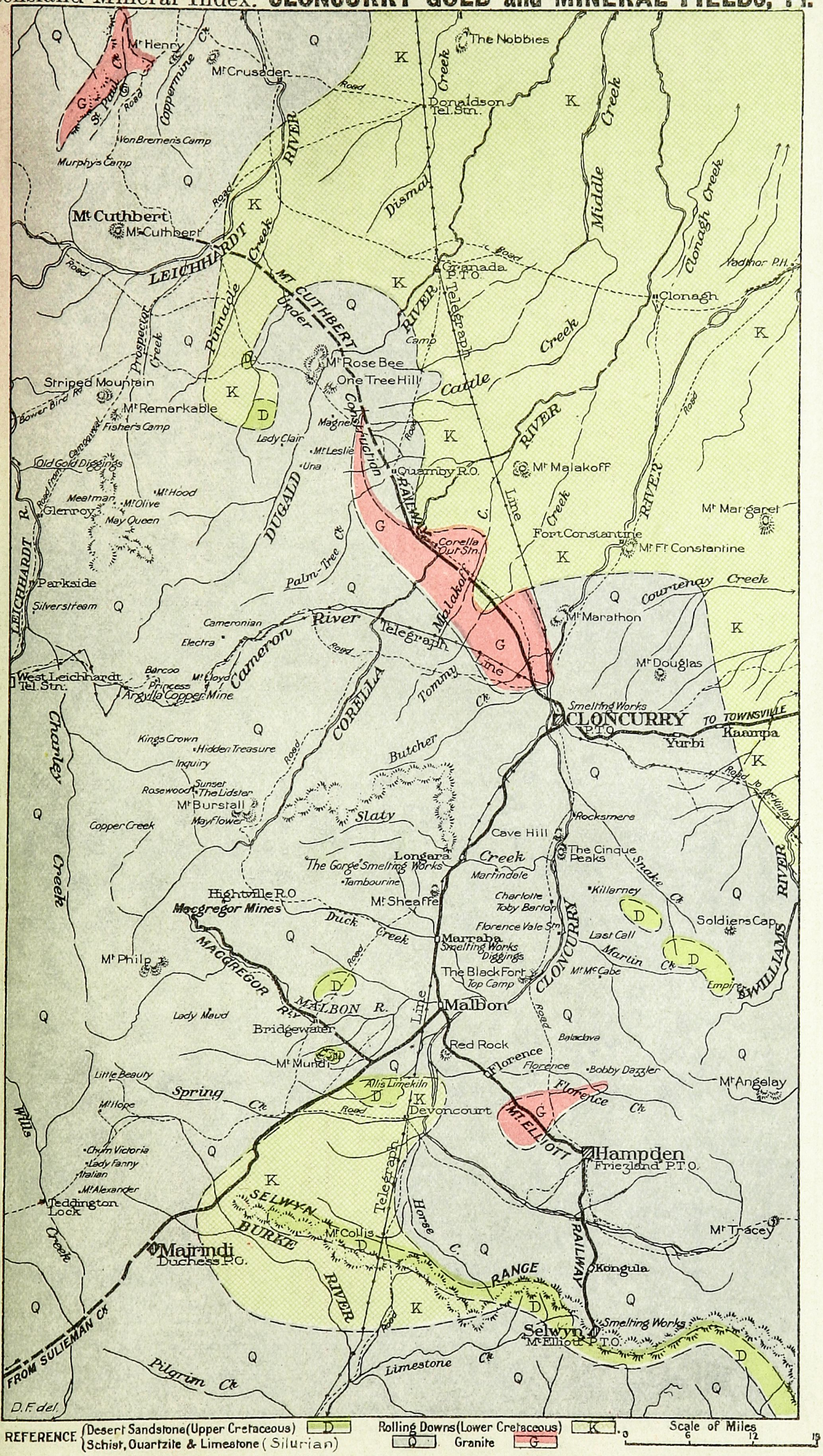
Drawn at the Geological Survey Office, Brisbane (D.F., also W.H.G., T.R.P., R.G.).

List of Fields and their Reference Numbers are shown on **Plate 46-46a.**



Scale of Miles
PACIFIC OCEAN
TRINITY BAY
Port Douglas
Mossman
Cape Grafton
Trinity Harbour
CAIRNS.
Woolanmeroo
Musgrave
Mourilyan
Innisfail
Babinda
Kuranda
Barron Falls
Mt. Molloy
Mt. Molloy Tramline
Mt. Fraser
Mt. Carbine
Mt. Alto.
Biboohra
MAREEBA
BARRON RIVER.
Clohesy River
CAIRNS–HERBERTON RAILWAY.
CAIRNS–MULGRAVE TRAMLINE.
MULGRAVE RIVER
MULGRAVE GOLDFIELD
RUSSELL GOLDFIELD
RUSSELL RIVER
JOHNSTONE R.
JOHNSTONE River
JORDAN GOLDFIELD
BEATRICE R.
COAST RANGE
HUGH NELSON RANGE
Tolga
Atherton
HERBERTON.
Tumoulin
Millstream Cr.
WILD RIVER
Mt. Garnet
Coolgarra
Nettle Cr.
HERBERTON GOLD AND MINERAL FIELD
Boundary between Herberton and Chillagoe Fields
WALSH RIVER.
Dry R.
Parada
Boonmoo
Watsonville
Stannary Hills
Irvinebank
Montalbion
Emuford
Glenlinedale
Newellton
Nymbool
Northcote
Thornborough
Kingsborough
TABLELAND
Dimbulah
WOLFRAM CAMP.
PROPOSED RAILWAY
Little River
Mt. Mulligan
Woodville
Stewart Town
Union Mills
Wellesley
Hodgkinson River
Eastern RIVER.
HODGKINSON
Mitchell R.
Emu Creek
Bamfords
Lappa
Featherbed Ran.
California Cr.
Ord
Packsaddle Cr.
Gilmore
Mt. Garnet
Bismark Camp
Kooboora
SANDY TATE RIVER.
Emmerson's Stn.
Mt. Baldick
Einasleigh RAILWAY
CHILLAGOE GOLD AND MINERAL FIELD
Little Watson River
Big Watson River
Crooked Creek
Chillagoe Creek
ALMADEN
Quaker Hill
CHILLAGOE
Calcifer
Mungana
Zillmanton
Redcap
Dargalong
Muldiva
Welcome Cr.
Muldiva Creek
WALSH RIVER
Tartana
Mitchell R.
MITCHELL RIVER
St. George River
Groganville
Bellevue
Road
O. K. Mines
Elizabeth Creek
Walsh Tel. Stn.
Nolan Creek
Arbouin
Blackdown Stn.
Fisherton
Tate Tin Mines
Scrubby Hill
ROCKY TATE RIVER.
Track
Mt. McDevitt
Tate Tel. Station
TATE RIVER
Mt. Nav.
Bolwarra Stn.
LYND RIVER
B. D. del.

CLONCURRY GOLD and MINERAL FIELDS, Pl. 23.

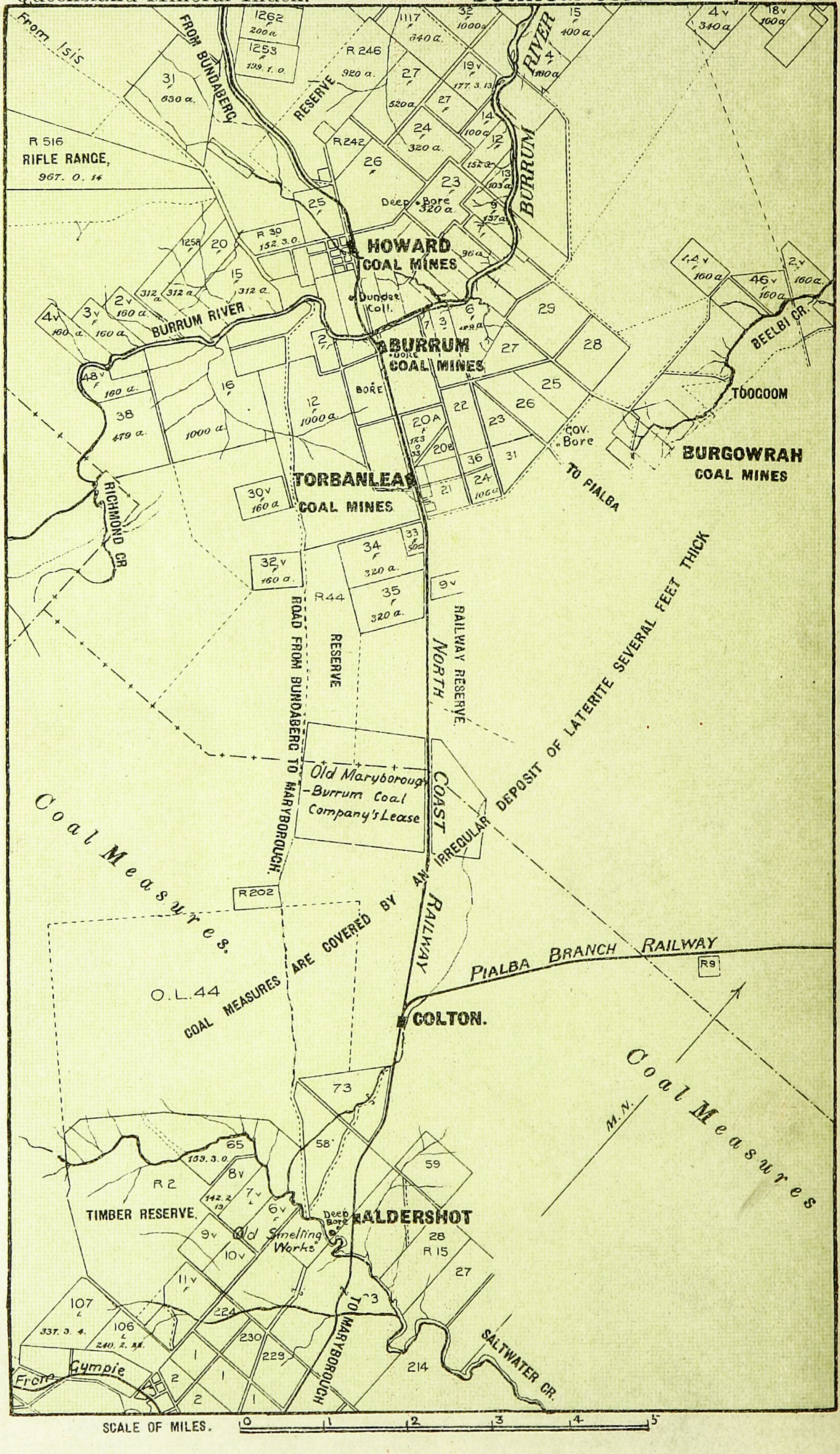

Mt Henry
St Paul Ck
Road
Coppermine Ck
Mt Crusader
The Nobbies
Road
Donaldson Tel. Stn.
Creek
Von Bremen's Camp
Murphy's Camp
RIVER
Dismal
Middle Creek
Clonagh Creek
Mt Cuthbert
Mt Cuthbert
LEICHHARDT
Creek
Road
Granada P.T.O.
Yadthor P.H.
Clonagh
MT CUTHBERT
Under
Pinnacle
Prospector Creek
RIVER
Camp
Telegraph
Creek
Mt Rose Bee
One Tree Hill
Striped Mountain
Bower Bird Rd
Mt Remarkable
Fisher's Camp
Cattle
RIVER
Construction
Lady Clair
Magnet
Mt Leslie
Una
Road
Quamby R.O.
Mt Malakoff
Old Gold Diggings
Road from Camooweal
Meatman
Mt Hood
Mt Olive
May Queen
Glenroy
DUGALD
RAILWAY
Creek
C.
Line
RIVER
Mt Margaret
Fort Constantine
Mt Ft Constantine
LEICHHARDT R.
Corella Out Stn.
Parkside
Silverstream
Palm Tree Ck
Malakoff
Courtenay Creek
Mt Marathon
Cameronian
Electra
River
Cameron
Telegraph
Line
Road
Mt Douglas
West Leichhardt Tel. Stn.
Barcoo
Princess
Mt Lloyd
Argylla Copper Mine
CORELLA
Tommy
Ck
Smelting Works
CLONCURRY P.T.O.
TO TOWNSVILLE
Yurbi
Kaampa
Charley Creek
Kings Crown
Hidden Treasure
Inquiry
Road
Butcher
Road to McKinlay
Rosewood
Sunset
The Lidster
Mt Burstall
Mayflower
Copper Creek
Slaty
Rocksmere
Cave Hill
Longara
Creek
The Cinque Peaks
The Gorge Smelting Works
Tambourine
Martindale
Snake Ck
Killarney
Hightville R.O.
Charlotte
Toby Barton
Macgregor Mines
Mt Sheaffe
Duck
Florence Vale Stn
CLONCURRY
Creek
Marraba
Smelting Works
Diggings
Last Call
Soldiers Cap
Martin Ck
MACGREGOR
Mt Philp
Road
The Black Fort
Top Camp
Mt McCabe
Empire
WILLIAMS
RIVER
RY
MALBON R.
Line
Malbon
Road
Lady Maud
Bridgewater
Baladava
Red Rock
Florence
Florence
Bobby Dazzler
Mt Mundi
Little Beauty
Mt Angelay
Spring
Ck
Allis Limekiln
Florence
Ck
Mt Hope
Road
Devoncourt
MT ELLIOTT
Wills
Telegraph
Hampden
Friezland P.T.O.
Chum Victoria
Lady Fanny
Italian
Mt Alexander
Horse
SELWYN
Teddington Lock
Mt Collis
BURKE
Mt Tracey
C.
Creek
Mairindi
Duchess P.O.
RAILWAY
Kongula
RANGE
RIVER
Road
Smelting Works
Selwyn
Mt Elliott P.T.O.
FROM SULIEMAN Ck
Pilgrim Ck
Limestone Ck
D.F. del.
Q
K
G
D

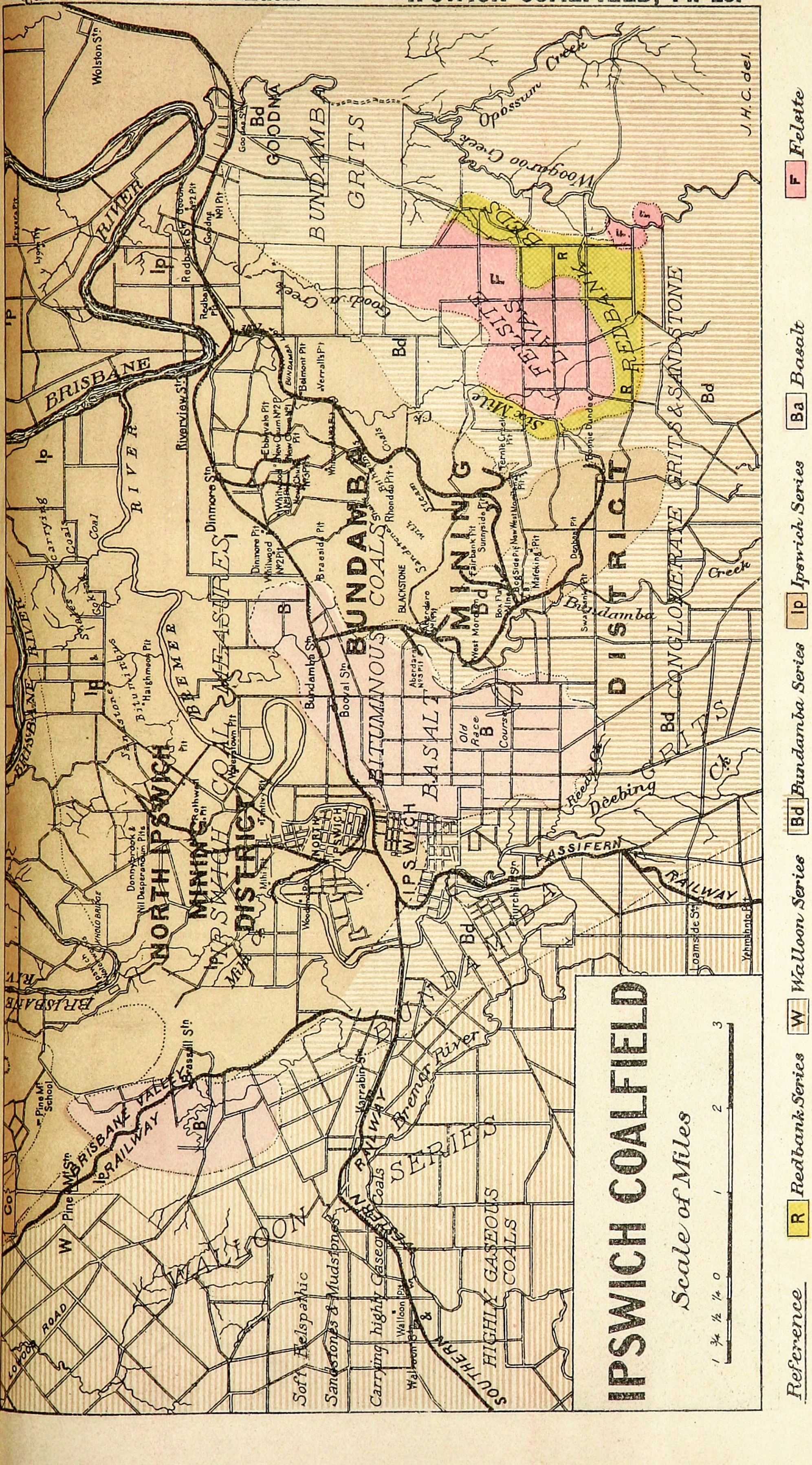
REFERENCE { Desert Sandstone (Upper Cretaceous) D
Schist, Quartzite & Limestone (Silurian) Q

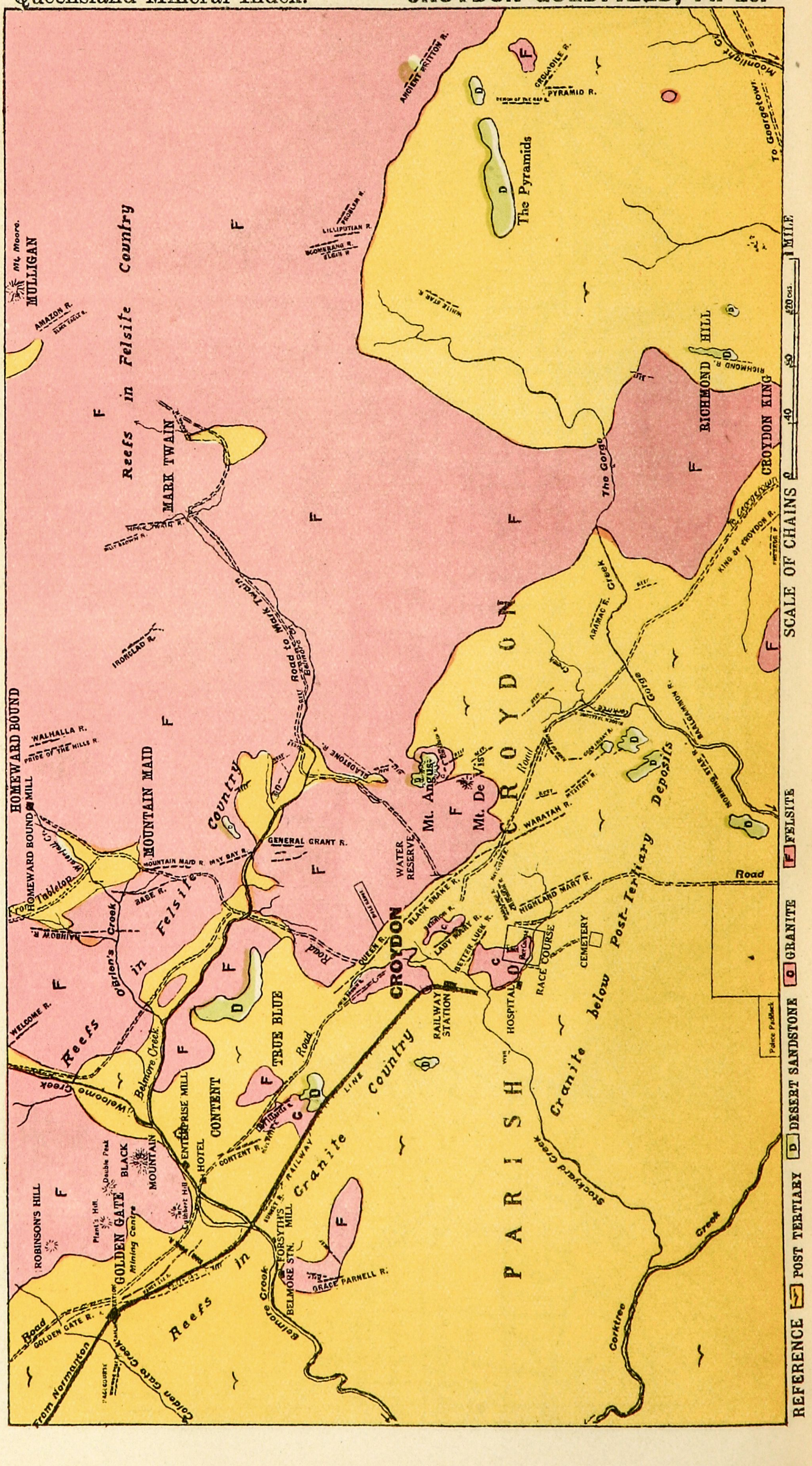
Rolling Downs (Lower Cretaceous) K
Granite G

Scale of Miles
0 6 12 18

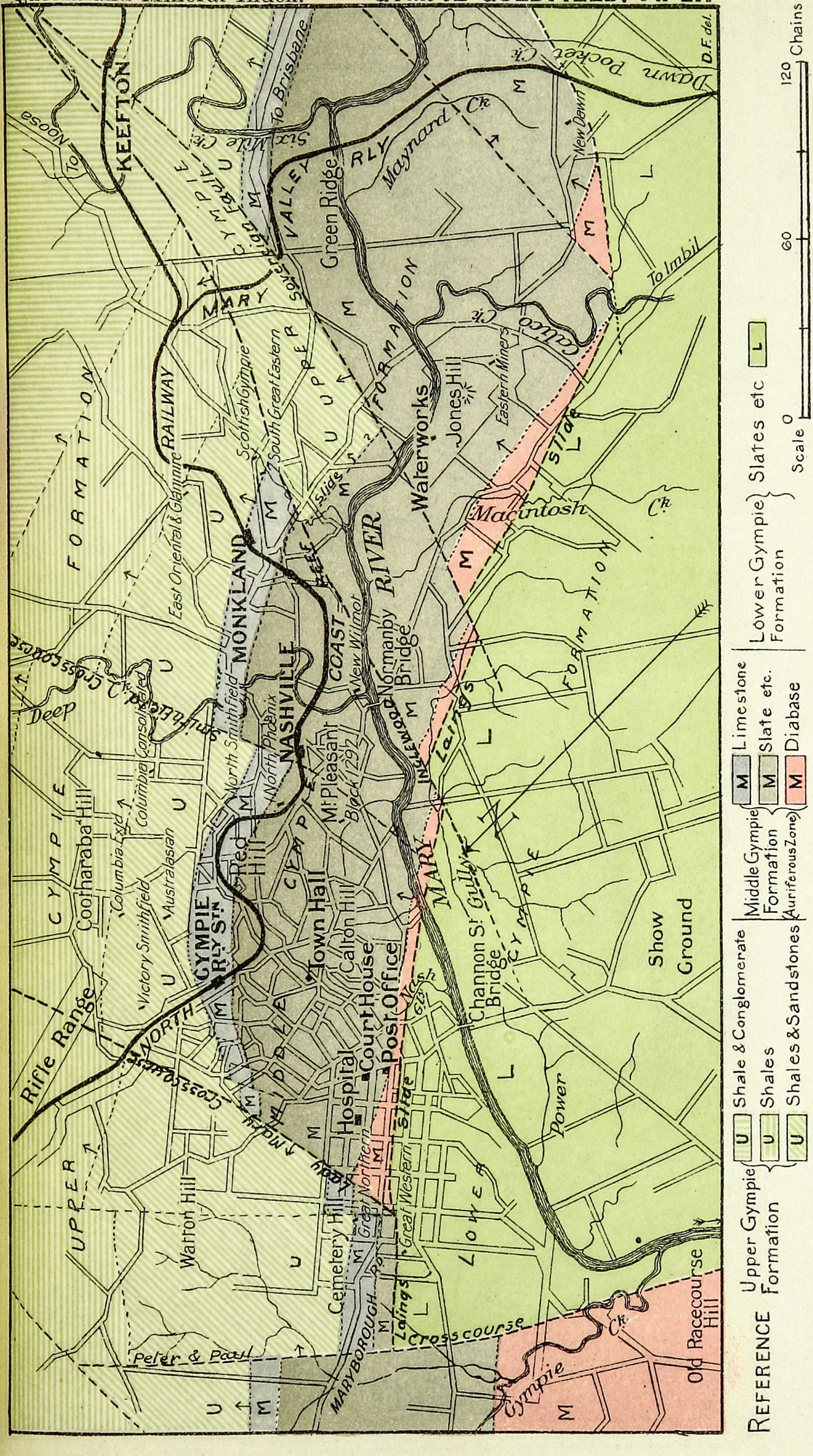
BURRUM COALFIELD, Pl. 24.


From Isis
FROM BUNDABERG
RESERVE
R 516
RIFLE RANGE
967. 0. 14
BURRUM RIVER
BURRUM RIVER
HOWARD COAL MINES
Dundee Coll.
BURRUM COAL MINES
Deep Bore
BORE
TORBANLEA COAL MINES
RICHMOND CR
BEELBI CR.
TOOGOOM
BURGOWRAH COAL MINES
GOV. Bore
TO PIALBA
R 242
R 246
R 30
R 44
RESERVE
ROAD FROM BUNDABERG TO MARYBOROUGH.
RAILWAY RESERVE
NORTH COAST RAILWAY
Old Maryborough-Burrum Coal Company's Lease
Coal Measures.
COAL MEASURES ARE COVERED BY AN IRREGULAR DEPOSIT OF LATERITE SEVERAL FEET THICK
R 202
O.L. 44
PIALBA BRANCH RAILWAY
R9
COLTON.
Coal Measures
M.N.
R 2
TIMBER RESERVE.
Old Smelting Works
Deep Bore
ALDERSHOT
R 15
TO MARYBOROUGH
SALTWATER CR.
From Gympie
SCALE OF MILES.
0
1
2
3
4
5

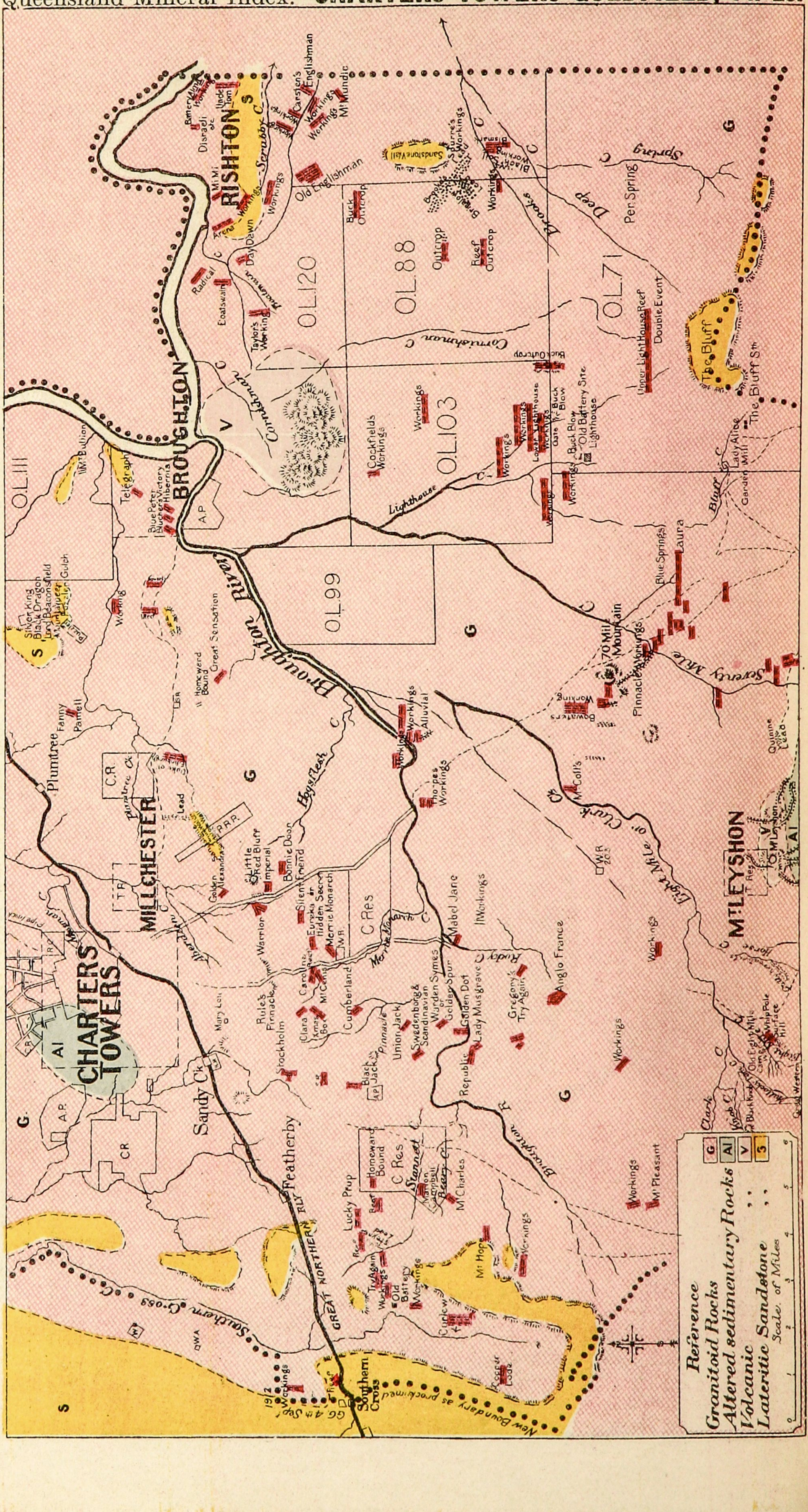

IPSWICH COALFIELD
Scale of Miles
1 ¾ ½ ¼ 0 1 2 3
Reference
R Redbank Series
W Walloon Series
Bd Bundamba Series
Ip Ipswich Series
Ba Basalt
F Felsite
J.H.C. del.
BUNDAMBA MINING DISTRICT
NORTH IPSWICH MINING DISTRICT
IPSWICH COAL MEASURES
BUNDAMBA BITUMINOUS COALS
BUNDAMBA GRITS
BUNDAMBA CONGLOMERATE GRITS & SANDSTONE
REDBANK BEDS
FELSITE LAVAS
BASALT
WALLOON SERIES
Soft Felspathic Sandstones & Mudstones Carrying highly Gaseous Coals
HIGHLY GASEOUS COALS
BRISBANE RIVER
BREMER RIVER
Bremer River
IPSWICH
NORTH IPSWICH
GOODNA
Opossum Creek
Woogaroo Creek
Goodna Creek
Six Mile Creek
Bundamba Creek
Deebing Creek
Reedy Ck.
Mihi Ck.
FASSIFERN RAILWAY
SOUTHERN & WESTERN RAILWAY
BRISBANE VALLEY RAILWAY
LOGAN ROAD
Old Race Course
Bundamba Stn
Booval Stn
Dinmore Stn
Riverview Stn
Redbank Stn
Goodna Stn
Wolston Stn
Walloon Stn
Churchill Stn
Loamside Stn
Karrabin Stn
Bassall Stn
Pine Mt. Stn
Pine Mt. School
Walloon Pit
Dinmore Pit
Whitwood No.2 Pit
Braeside Pit
Rhondda Pit
Aberdare No.3 Pit
Blackstone
West Moreton Pit
Fairbank Pit
Sunnyside Pit
New Side Pit
New West Moreton Pit
Mafeking Pit
Denton Pit
Bonnie Dundee
Swanbank Pit
Box Flat
Belmont Pit
Verrall's Pit
Ebbw Vale Pit
New Chum No.1
Haighmoor Pit
Rothwell Pit
Westown Pit
Tantivy Pit
Woodend Pit
Donnybrook & Nil Desperandum Pits
Yehmonte Pit
Redbank Pit
Goodna No.1 Pit
Goodna No.2 Pit
Bd
Ip
B
W
R
F


MULLIGAN
Mt. Moore
AMAZON R.
Reefs in Felsite Country
MARK TWAIN
MARK TWAIN R.
BILLY BROWN R.
LILLIPUTIAN R.
BOOMERANG R.
ELGIN R.
ANCIENT BRITTON R.
PYRAMID R.
CROCODILE R.
The Pyramids
WHITE STAR R.
Moonlight Ck.
To Georgetown
RICHMOND HILL
RICHMOND R.
CROYDON KING
KING OF CROYDON R.
To Georgetown
The Gorge
ARARAC R.
Creek
Gorge
BALLAMBINON R.
MORNING STAR R.
IRONCLAD R.
Road to Mark Twain
Belmore Ck.
GLADSTONE R.
HOMEWARD BOUND
HOMEWARD BOUND MILL
WALHALLA R.
PRIDE OF THE HILLS R.
MOUNTAIN MAID
MOUNTAIN MAID R.
MAY BAY R.
GENERAL GRANT R.
BABE R.
RAINBOW R.
From Tabletop
O'Brien's Creek
Reefs in Felsite Country
Mt. Angus
Mt. De Vis
WATER RESERVE
CROYDON
PARISH OF CROYDON
Road
WARATAH R.
MYSTERY R.
BLACK SNAKE R.
LADY MARY R.
BETTER LUCK R.
HIGHLAND MARY R.
HOSPITAL
RACE COURSE
CEMETERY
Post-Tertiary Deposits
Granite below Post-Tertiary Deposits
Road
Police Paddock
QUEEN R.
RAILWAY STATION
Road
TRUE BLUE
CONTENT
CONTENT R.
HOTEL
ENTERPRISE MILL
BLACK MOUNTAIN
Welcome Creek
WELCOME R.
Reefs in Granite Country
RAILWAY LINE
FORSYTH'S MILL
BELMORE STN.
Belmore Creek
GRACE PARNELL R.
ROBINSON'S HILL
Plant's Hill
Double Peak
Cuthbert Hill
GOLDEN GATE Mining Centre
GOLDEN GATE R.
Golden Gate Creek
From Normanton
Road
Stockyard Creek
Corktree Creek
F
D
G
SCALE OF CHAINS
0 10 20 30 40 50 60 70 80 1 MILE
REFERENCE
POST TERTIARY
D DESERT SANDSTONE
G GRANITE
F FELSITE

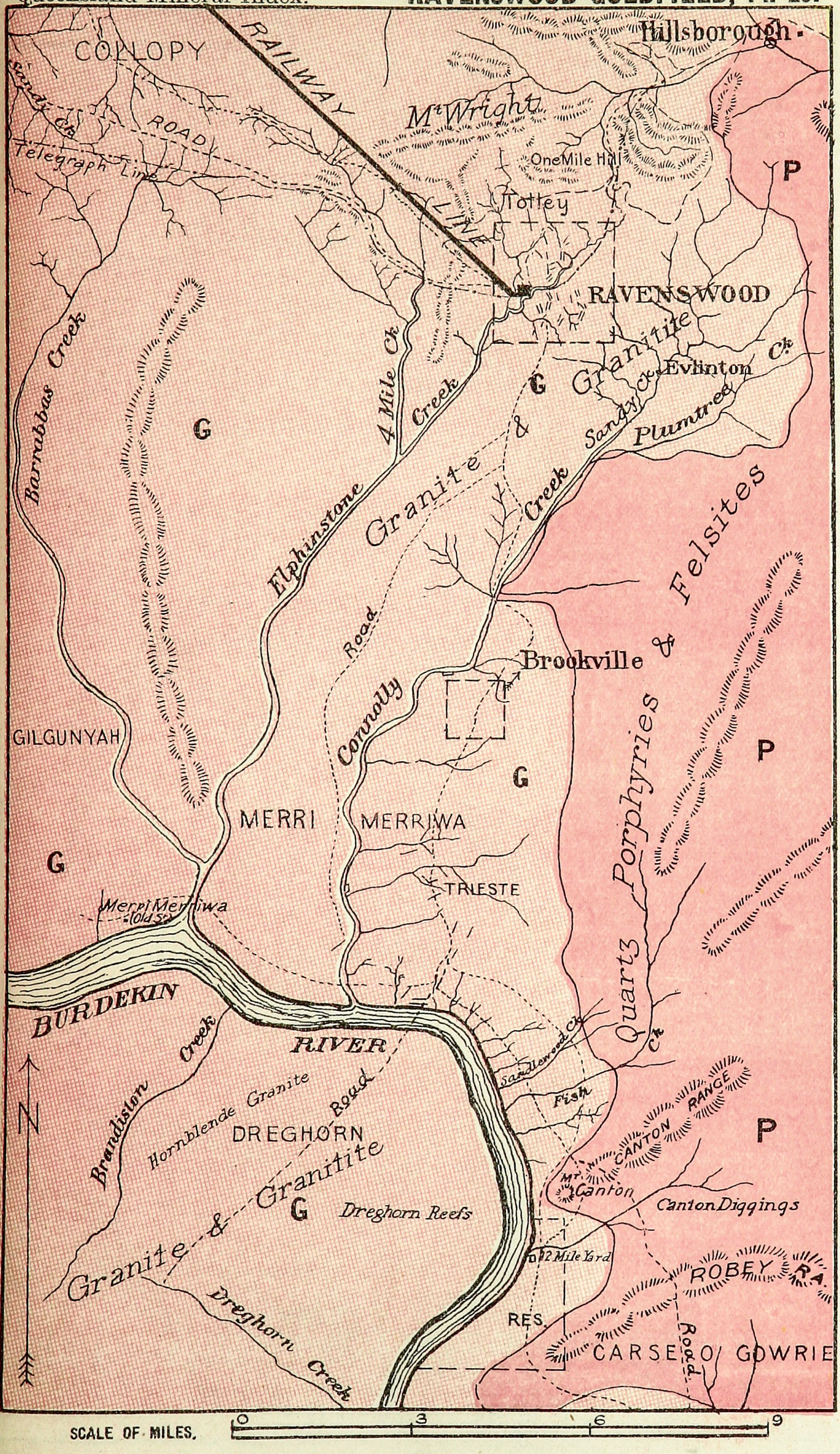
GYMPIE GOLDFIELD. Pl. 27.


REFERENCE
Upper Gympie Formation
U Shale & Conglomerate
U Shales
U Shales & Sandstones
Middle Gympie Formation (Auriferous Zone)
M Limestone
M Slate etc.
M Diabase
Lower Gympie Formation
Slates etc L
Scale
0
60
120 Chains
D.F. del.
UPPER GYMPIE FORMATION
MIDDLE GYMPIE FORMATION
LOWER GYMPIE FORMATION
MARY VALLEY RLY
NORTH COAST RAILWAY
KEEFTON
MONKLAND
NASHVILLE
GYMPIE RLY STN
To Noosa
To Brisbane
To Imbil
Six Mile Ck
Dawn Pocket Ck
Maynard Ck
Calico Ck
Macintosh Ck
Deep Ck
Gympie Ck
MARY RIVER
Green Ridge
Waterworks
Jones Hill
Eastern Miners
New Dawn
Normanby Bridge
New Wilmot
Mt Pleasant Block (1292)
Calton Hill
Town Hall
Court House
Post Office
Hospital
Red Hill
Cemetery Hill
Wanton Hill
Cooraharaba Hill
Rifle Range
Channon St Bridge
Channon St Gully
Nash Gy
Show Ground
Power
Old Racecourse Hill
Gympie Fault
Sovereign
Scottish Gympie
South Great Eastern
East Oriental & Glanmire
North Smithfield
North Phoenix
Smithfield
Columbia Consolidated
Columbia Extd
Victory Smithfield
Australasian
Great Northern
Great Western
Lady Mary Crosscourse
Crosscourse
Peter & Paul
Inglewood Reef
Laings Slide
Mary Slide
Slide
MARYBOROUGH RD

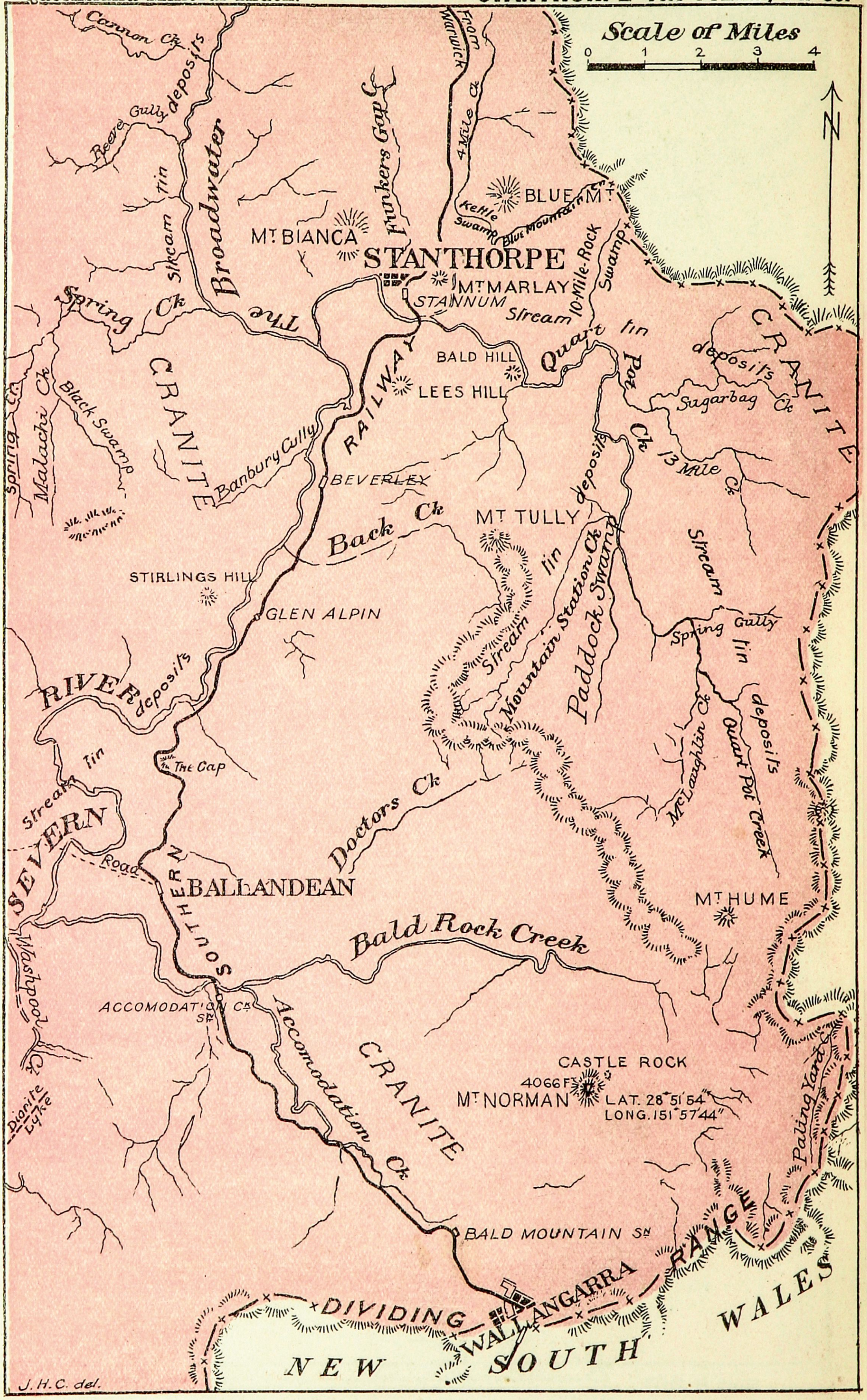
Queensland Mineral Index. **CHARTERS TOWERS GOLDFIELD, Pl. 28.**


CHARTERS TOWERS
MILLCHESTER
BROUGHTON
RISHTON
M^t. LEYSHON
Broughton River
Plumtree
Sandy Ck
Featherby
Southern Cross
GREAT NORTHERN RLY
Southern Cross C
New Boundary as proclaimed
G.G. 4th Sept 1912
O.L.111
O.L.120
O.L.88
O.L.71
O.L.103
O.L.99
70 Mile Mountain
Seventy Mile
Eight Mile or Clark Ck
The Bluff
Lighthouse C
Deep C
Brooks C
Cornishman C
Hogsflesh C
Scrubby C
Rudd C
Per. Spring
Upper Lighthouse Reef
Double Event
Laura
Blue Springs
Pinnacle Workings
Mabel Jane
Anglo France
Lucky Prop
M^t. Hope
M^t. Pleasant
Mary Lou
Warrior
Cumberland
Union Jack
Black Jack
Republic
Golden Dot
Lady Musgrave
Gregory's Try Again
Old Englishman
Day Dawn
Taylor's Workings
Cockfields Workings
Telegraph
Silver King
Great Sensation
Homeward Bound
Sandstone Wall
Reference
Granitoid Rocks G
Altered sedimentary Rocks Al
Volcanic V
Lateritic Sandstone S
Scale of Miles 0 1 2 3 4 5 6
J.H.C. del.

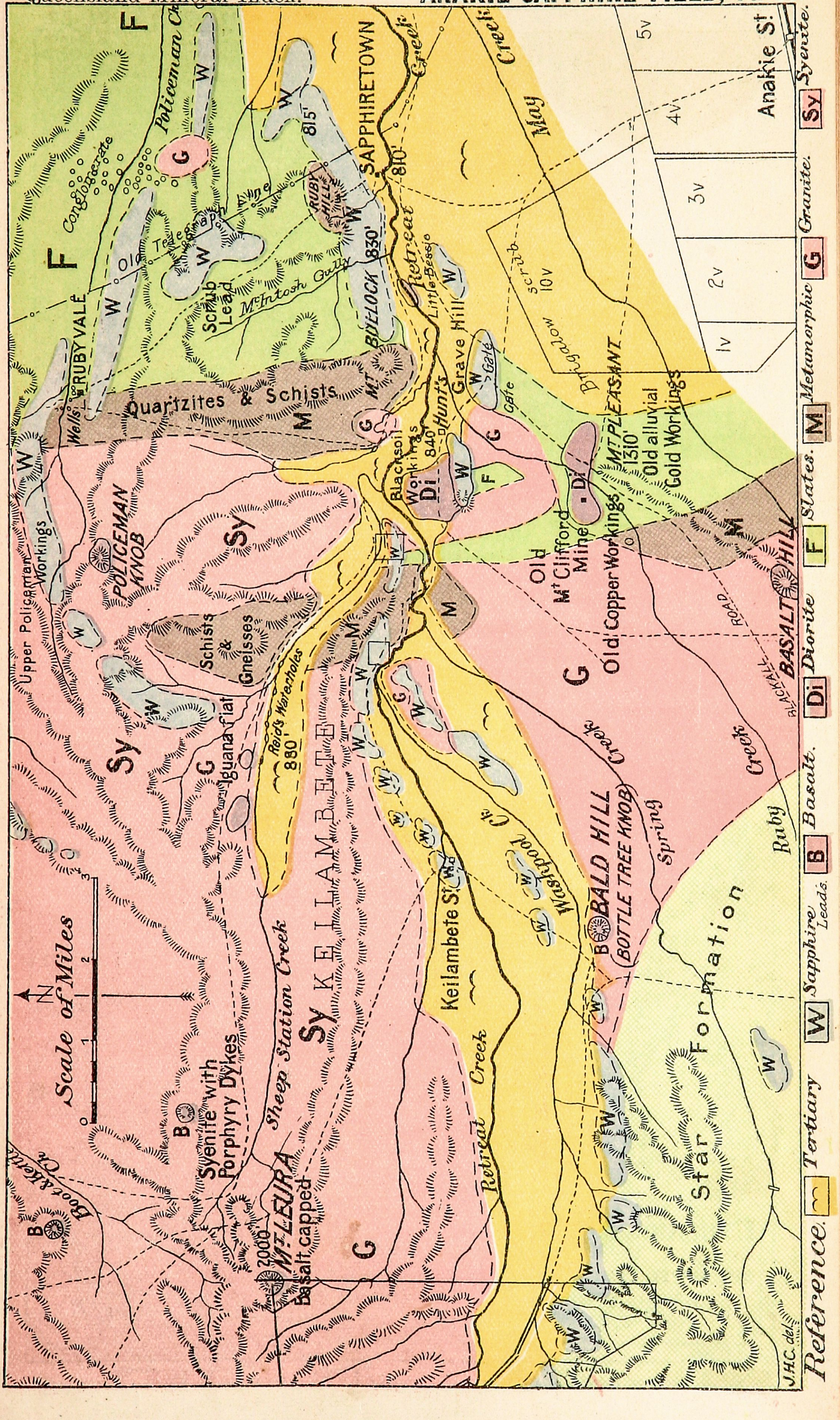
RAVENSWOOD GOLDFIELD, Pl. 29.

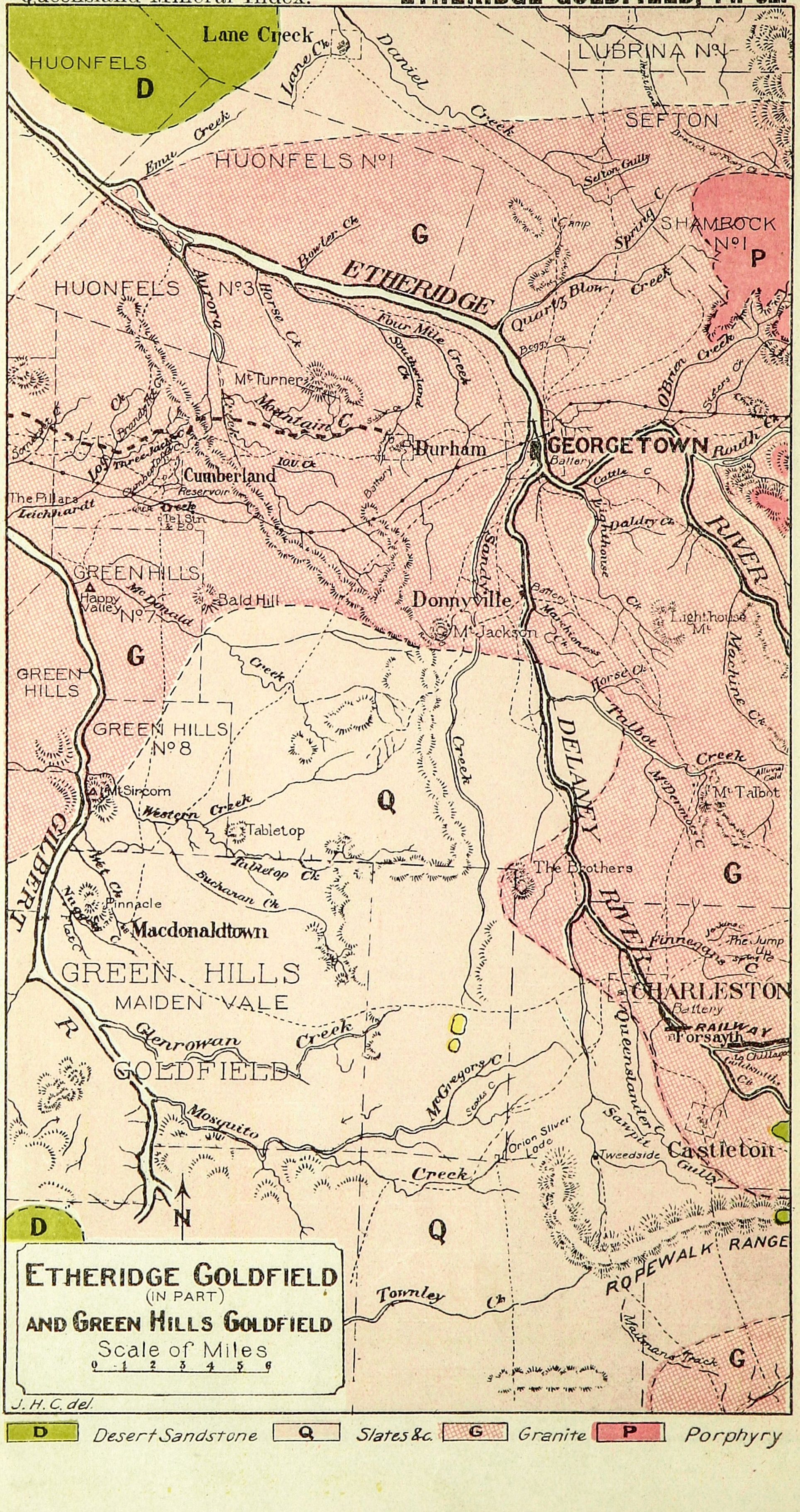

COLLOPY
RAILWAY LINE
Hillsborough
Sandy Ck
ROAD
Telegraph Line
Mt Wright
One Mile Hill
Totley
RAVENSWOOD
P
Granitite
G
Evlinton
Ck
Plumtree
Sandy Ck
Creek
4 Mile Ck
Creek
Barrabbas Creek
G
Elphinstone
Granite & Granitite
Creek
Quartz Porphyries & Felsites
Brookville
Road
Connolly
GILGUNYAH
G
P
MERRI
MERRIWA
TRIESTE
G
Merri Merriwa (Old Stn)
BURDEKIN
RIVER
Brandiston Creek
Hornblende Granite
Road
DREGHORN
Granite & Granitite
G
Dreghorn Reefs
Sandlewood Ck
Fish Ck
CANTON RANGE
Mt Canton
Canton Diggings
P
12 Mile Yard
ROBEY RA.
RES.
Road
CARSE O' GOWRIE
Dreghorn Creek
N
SCALE OF MILES.
0
3
6
9

STANTHORPE TIN FIELD, Pl. 30.


Scale of Miles
0 1 2 3 4
N
From Warwick
Cannon Ck
deposits
Reeve Gully
tin
stream
The Broadwater
Funkers Gap Ck
4 Mile Ck
BLUE MT
Blue Mountain Ck
Kettle Swamp
MT BIANCA
STANTHORPE
MT MARLAY
STANNUM
Stream
10 Mile Rock Swamp
Spring Ck
CRANITE
Spring Ck
Malachi Ck
Black Swamp
Banbury Gully
RAILWAY
BALD HILL
LEES HILL
Quart tin
Pot Ck
deposits
Sugarbag Ck
13 Mile Ck
CRANITE
BEVERLEY
Back Ck
MT TULLY
deposits
Mountain Station Ck
Paddock Swamp
tin
Stream
Stream
STIRLINGS HILL
GLEN ALPIN
Spring Gully
tin
deposits
McLaughlin Ck
Quart Pot Creek
RIVER deposits
tin
Stream
SEVERN
The Cap
Doctors Ck
Road
SOUTHERN
BALLANDEAN
MT HUME
Bald Rock Creek
Washpool Ck
Diorite Dyke
ACCOMODATION CK SN
Accomodation Ck
CRANITE
CASTLE ROCK
4066 F
MT NORMAN
LAT. 28°51'54"
LONG. 151°57'44"
Paling Yard
BALD MOUNTAIN SN
RANGE
DIVIDING
WALLANGARRA
NEW SOUTH WALES

J.H.C. del.

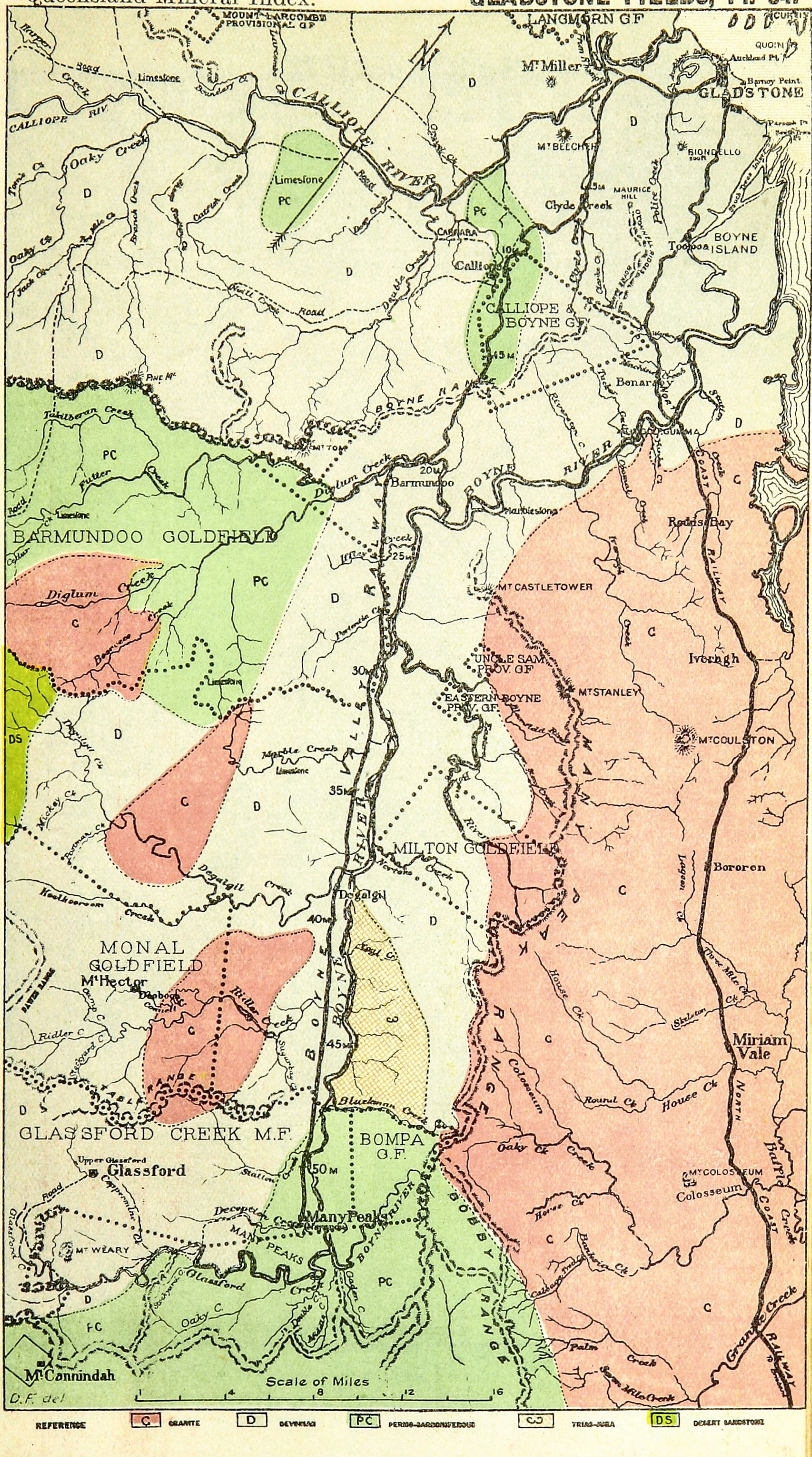

Reference.
Tertiary
W Sapphire Leads.
B Basalt.
Di Diorite
F Slates.
M Metamorphic
G Granite.
Sy Syenite.
J.H.C. del.
Scale of Miles
0
1
2
3
N
SAPPHIRETOWN
815'
810'
830'
RUBY HILL
Mt BULLOCK
RUBYVALE
Wells
Policeman Ck
Conglomerate
Old Telegraph Line
Scrub Lead
McIntosh Gully
Retreat Creek
Little Bessie
Grave Hill
Gate
Hunt's
Quartzites & Schists
Blacksoil Workings
840'
May Creek
Anakie St.
Bingalow scrub
10v
5v
4v
3v
2v
1v
Mt PLEASANT
1310'
Old alluvial Gold Workings
Old Mt Clifford Mine
Old Copper Workings
BASALT HILL
BLACKALL ROAD
Ruby Creek
POLICEMAN KNOB
Upper Policeman Workings
Schists & Gneisses
Iguana Flat
Reid's Waterholes
880'
KEILLAMBETE
Keilambete St.
Washpool Ck
BALD HILL
(BOTTLE TREE KNOB)
Spring Creek
Star Formation
Sheep Station Creek
Syenite with Porphyry Dykes
Mt LEURA
2000'
Basalt capped
Retreat Creek
Boot Kettle Ck
F
G
M
Sy
Di
W
B



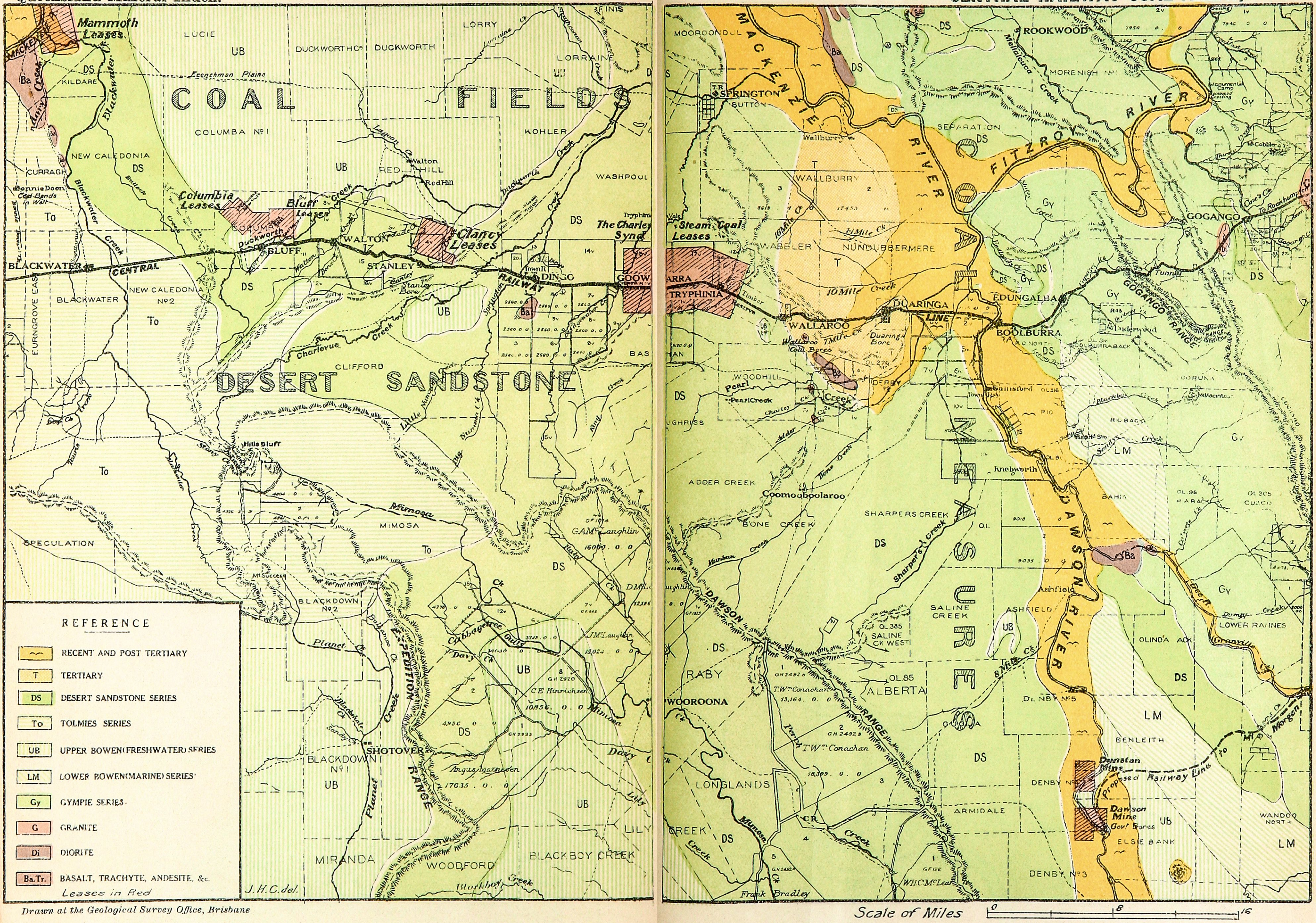
ETHERIDGE GOLDFIELD
(IN PART)
AND GREEN HILLS GOLDFIELD

Scale of Miles
0 1 2 3 4 5 6
J. H. C. del.
HUONFELS
D
Lane Creek
Lane Ck
Daniel Creek
LUBRINA Nº1
Emu Creek
SEFTON
HUONFELS Nº1
Sefton Gully
Camp
Spring C
SHAMROCK Nº1
P
G
Bowler Ck
ETHERIDGE
HUONFELS Nº3
Aurora
Horse Ck
Four Mile Creek
Southerland Ck
Quartz Blow Creek
Beggy Ck
O'Brien Creek
Sisters Ck
Mt Turner
Mountain C
Brandy Ck
Three Jack C
Sandy Ck
Lode
Durham
GEORGETOWN
Battery
Routh Ck
Cattle C
IOU Ck
Cumberland
Reservoir
The Pillars
Leichhardt Creek
Tel. Stn & P.O.
Battery
Lighthouse
Daldry Ck
RIVER
GREEN HILLS
Happy Valley
McDonald
Nº7
Bald Hill
Donnyville
Sandy Ck
Battery
Marchioness Ck
Mt Jackson
Lighthouse Mt
Machine Ck
G
GREEN HILLS
Creek
Horse Ck
Talbot
DELANEY
GREEN HILLS Nº8
Creek
Q
Creek
McDermid's C
Mt Talbot
Alluvial Gold
Mt Sircom
Western Creek
Tabletop
Tabletop Ck
The Brothers
G
GILBERT
Wet Ck
Buchanan Ck
Nuggety Flat
Pinnacle
Macdonaldtown
RIVER
Finnegan's C
The Jump Up
Jenkins C
Spring C
GREEN HILLS
MAIDEN VALE
CHARLESTON
Battery
RAILWAY
Forsayth
To Chillagoe
Goldsmith Ck
R
Glenrowan Creek
GOLDFIELD
Queenslander C
McGregor's C
Scotts C
Mosquito
Orion Silver Lode
Sawpit C
Tweedside
Castleton
Gully
Creek
N
D
Q
ROPEWALK RANGE
Townley Ck
Maitland's Track
G
D Desert Sandstone
Q Slates &c.
G Granite
P Porphyry

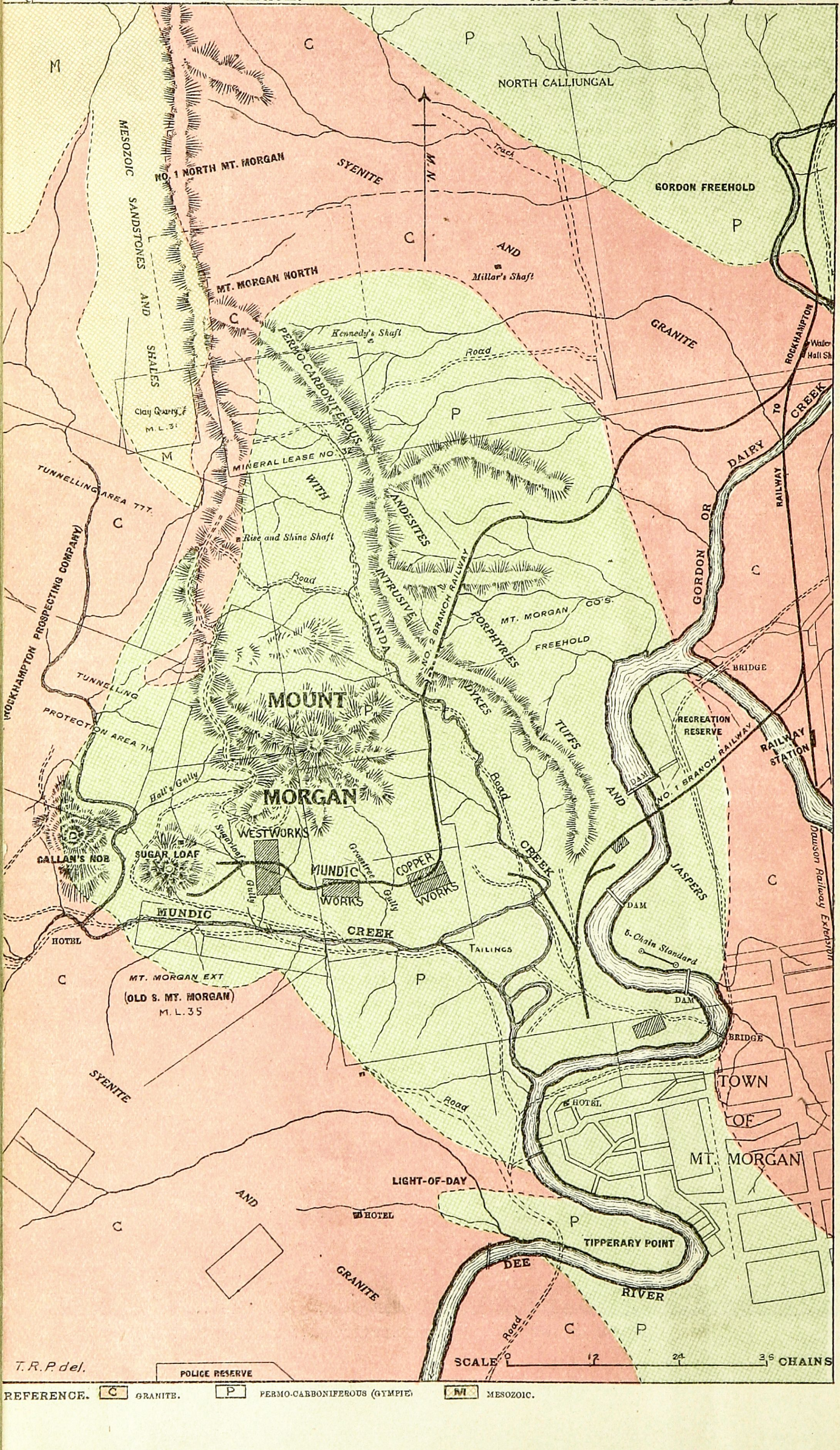
GLADSTONE FIELDS, PL. 34.


MOUNT LARCOMBE PROVISIONAL G.F.
LANGMORN G.F.
Mt Miller
GLADSTONE
Auckland Pt.
Barney Point
QUOIN I.
CURTIS I.
CALLIOPE RIVER
Calliope Riv.
Oaky Creek
Limestone
N
D
PC
Mt BLECHER
BIONDELLO
Clyde Creek
MAURICE HILL
Police Creek
BOYNE ISLAND
Tooloa
Callione
CALLIOPE & BOYNE G.F.
Bonaragy
BOYNE RANGE
Mt TOM
Pine Mt
Takilberan Creek
Futter Creek
Diglum Creek
Barmundoo
BOYNE RIVER
BARMUNDOO GOLDFIELD
C
Rodds Bay
Mt CASTLETOWER
UNCLE SAM PROV. G.F.
EASTERN BOYNE PROV. G.F.
Mt STANLEY
Mt COULSTON
Iveragh
DS
Marble Creek
BOYNE VALLEY RAILWAY
MILTON GOLDFIELD
Bororen
Degalgil Creek
Degalgil
Koolkooroom Creek
MONAL GOLDFIELD
Mt Hector
Ridler Creek
Mickey Ck
TABLE RANGE
Miriam Vale
NORTH COAST RAILWAY
Colosseum Creek
Round Ck
House Ck
Oaky Ck
GLASSFORD CREEK M.F.
Glassford
Upper Glassford
BOMPA G.F.
Bluckman Creek
Many Peaks
MANY PEAKS RANGE
BOBBY RANGE
Mt COLOSSEUM
Colosseum
Mt WEARY
Glassford Creek
Oaky C.
Granite Creek
Palm Creek
Seven Mile Creek
Mt Cannindah
Scale of Miles
1 4 8 12 16
D.F. del
REFERENCE
C GRANITE
D DEVONIAN
PC PERMO-CARBONIFEROUS
TRIAS-JURA
DS DESERT SANDSTONE

CENTRAL RAILWAY COAL AREAS, Pl. 33.


COAL FIELD
DESERT SANDSTONE
COAL MEASURES
Mammoth Leases
Columbia Leases
Bluff Leases
Clancy Leases
The Charley Synd.
Steam Coal Leases
TRYPHINIA
Dunstan Mine
Dawson Mine
Proposed Railway Line to Mt. Morgan
CENTRAL RAILWAY
BLACKWATER
BLUFF
WALTON
STANLEY
DINGO
DUARINGA
WALLAROO
BOOLBURRA
EDUNGALBA
GOGANGO
ROOKWOOD
SPRINGTON
MACKENZIE RIVER
FITZROY RIVER
DAWSON RIVER
Blackwater Creek
Mimosa
EXPEDITION RANGE
GOGANGO RANGE
DAWSON RANGE
SHOTOVER
BLACKDOWN
MIRANDA
WOODFORD
BLACKBOY CREEK
REFERENCE
~ RECENT AND POST TERTIARY
T TERTIARY
DS DESERT SANDSTONE SERIES
To TOLMIES SERIES
UB UPPER BOWEN (FRESHWATER) SERIES
LM LOWER BOWEN (MARINE) SERIES
Gy GYMPIE SERIES
G GRANITE
Di DIORITE
Ba.Tr. BASALT, TRACHYTE, ANDESITE, &c.
Leases in Red
J. H. C. del.
Scale of Miles
0
8
16

Drawn at the Geological Survey Office, Brisbane


M
C
P
NORTH CALLIUNGAL
GORDON FREEHOLD
P
M.N.
Track
MESOZOIC
SANDSTONES
AND
SHALES
NO. 1 NORTH MT. MORGAN
SYENITE
C
AND
Millar's Shaft
MT. MORGAN NORTH
GRANITE
C
Kennedy's Shaft
PERMO-CARBONIFEROUS
Road
Clay Quarry
M.L. 31
M
P
MINERAL LEASE NO. 32
WITH
ANDESITES
TUNNELLING AREA 777.
C
Rise and Shine Shaft
ROCKHAMPTON PROSPECTING COMPANY
Road
INTRUSIVE
LINDA
NO. 2 BRANCH RAILWAY
PORPHYRIES
MT. MORGAN CO'S.
FREEHOLD
DYKES
TUFFS
AND
JASPERS
TUNNELLING
PROTECTION AREA 714
MOUNT
P
MORGAN
Hall's Gully
Sugarloaf Gully
WESTWORKS
CALLAN'S NOB
SUGAR LOAF
MUNDIC
WORKS
Greentree Gully
COPPER
WORKS
Road
CREEK
ROCKHAMPTON
Water
Hall Sh
TO
DAIRY
OR
GORDON
CREEK
RAILWAY
C
BRIDGE
RECREATION
RESERVE
RAILWAY
STATION
DAM
NO. 1 BRANCH RAILWAY
DAM
6 Chain Standard
DAM
C
Dawson Railway Extension
MUNDIC
CREEK
HOTEL
TAILINGS
C
MT. MORGAN EXT
(OLD S. MT. MORGAN)
M.L. 35
P
BRIDGE
TOWN
OF
MT. MORGAN
HOTEL
Road
SYENITE
AND
LIGHT-OF-DAY
HOTEL
C
P
TIPPERARY POINT
DEE
RIVER
GRANITE
Road
C
P
T.R.P. del.
SCALE 0 12 24 36 CHAINS
POLICE RESERVE

REFERENCE. C GRANITE. P PERMO-CARBONIFEROUS (GYMPIE) M MESOZOIC.

Silver.

Queensland Mineral Index. Statistical Table. Yields of SILVER (approx.) to end of 1912. See also Plates 45, 46, 46a, and 48.

PLATE 37.

The Table also shows the AVERAGE Annual Market Quotations of Silver.

Year.	GOLD AND MINERAL FIELDS.																									Total Quantity.	Total Value.	Average Annual Value per Oz (approx.)	Year.
	Biggenden.	Bowen.	Burketown.	Charters Towers.	Cloncurry.	Cooktown.	Croydon.	Eidsvold.	Etheridge.	Gayndah.	Gladstone.	Gympie and Kilkivan.	Herberton.	Hodgkinson.	Kangaroo Hills.	Mackay.	Mount Morgan.	Mount Perry.	Paradise.	† Ravenswood.	Rockhampton.	Sellheim and Star River.	Stanthorpe.	Warwick.	Other Sources.				
	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz	Oz.	Oz.	Oz.	Oz.	Oz.	£	s. d.	
1879	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	††1,581	..	..	..	..	..	1,581	345	4 3¼	1879
1880	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16,582	..	..	..	..	..	16,582	3,610	4 4¼	1880
1881	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	71,606	..	..	..	..	..	71,606	15,440	4 3¾	1881
1882	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31,512	..	..	..	..	..	31,512	6,762	4 3½	1882
1883	..	..	..	..	..	..	..	..	..	..	..	..	‡100,277	..	..	..	..	..	..	212,065	..	2,233	..	..	..	314,575	66,192	4 2½	1883
1884	..	..	..	..	..	..	..	..	..	..	..	..	‡ 7,604	..	..	..	..	..	..	147,811	..	12,475	..	..	..	167,890	35,327	4 2½	1884
1885	..	..	..	..	..	..	..	..	..	..	..	..	‡ 181,049	..	..	..	..	..	..	110,880	..	28,528	..	..	..	320,457	64,759	4 0½	1885
1886	..	..	..	..	..	..	..	..	..	7,160	..	..	‡ 119,051	..	..	..	..	..	..	111,063	..	42,754	..	..	..	280,028	52,797	3 9¼	1886
1887	..	..	..	..	..	..	..	..	..	..	..	..	‡ 294,321	..	..	..	..	..	..	111,667	..	25,968	..	..	..	431,956	80,092	3 8½	1887
1888	..	..	982	..	..	..	..	..	..	..	..	..	‡ 235,789	..	..	..	..	..	..	4,715	..	5,614	..	..	..	247,100	44,015	3 6¾	1888
1889	..	..	..	..	..	..	..	..	..	..	..	..	‡ 312,606	..	..	..	..	..	..	..	..	32,657	..	..	..	345,263	61,500	3 6¾	1889
1890	..	15,078	..	..	..	..	..	..	..	..	..	..	‡ 232,204	..	..	..	..	..	..	32,228	..	5,167	..	..	..	284,677	56,639	3 11¾	1890
1891	..	9,947	..	..	..	..	..	..	..	..	..	..	‡ 102,080	..	..	..	..	..	..	1,067	..	3,594	..	..	..	116,688	21,879	3 8¾	1891
1892	..	..	..	..	..	..	..	..	84	..	..	766	‡ 198,492	..	..	..	..	..	..	..	..	25,188	280	..	..	224,810	36,436	3 2¾	1892
1893‡	..	226	..	..	..	..	..	..	..	..	..	30	287,665	..	..	..	..	..	..	..	..	34,218	17,128	..	..	339,267	42,408	2 6	1893
1894	..	13,360	..	..	..	..	..	..	..	..	..	..	78,343	..	624	..	..	..	..	..	..	5,764	85,067	..	..	183,158	22,077	2 5	1894
1895	..	..	..	..	..	..	..	..	..	..	..	..	59,971	..	..	..	..	..	..	..	..	33,650	106,940	..	24,458	225,019	30,042	2 5	1895
1896	..	..	..	41	..	..	73	220	..	..	..	152	37,030	15,378	..	..	..	..	..	..	..	102,600	122,421	..	1,369	279,284	32,162	2 3¾	1896
1897	..	..	3,181	637	..	..	..	351	63	..	..	36	35,281	49,950	..	..	..	..	970	..	92	29,406	113,822	..	276	234,065	25,118	2 1¾	1897
1898	..	17	6,206	802	..	..	..	83	34	..	64	727	12,040	..	..	..	..	44	..	692	87	23,225	60,000	..	..	104,021	10,585	2 0¼	1898
1899	..	..	359	2,334	..	..	..	..	42	..	250	640	11,090	..	..	..	..	481	..	..	87	54,308	75,698	..	36	145,325	15,671	1 5¾	1899
1900	..	..	1,556	4,283	29	..	368	104	37	..	2,157	1,774	5,249	..	..	116	..	2,636	58	661	970	6,553	68,914	..	17,525	112,990	12,712	2 3	1900
1901	..	..	2,646	18,980	65	20	376	386	1,392	..	291	2,007	420,646	..	6,315	567	163	20,334	31	..	1,976	15,398	75,055	..	4,913	571,561	62,241	2 2¼	1901
1902	1,242	..	2,309	34,916	191	..	142	23	30	..	48	1,696	519,227	..	..	818	..	40,585	..	1,561	1,962	17,379	74,820	..	4,363	701,312	70,145	2 0	1902
1903	1,415	23,404	..	15,583	456	..	1,497	18	..	..	928	2,731	423,968	..	1,033	211	..	72,398	..	7,302	798	..	85,460	..	4,923	642,125	65,538	2 0½	1903
1904	638	19,332	..	38,733	13	..	9,983	11	..	..	1,060	2,687	363,373	..	7,805	..	165	75,447	..	10,371	248	For subsequent years, *see* Bowen.	122,385	10	2,668	654,929	71,858	2 4	1904
1905	319	24,187	667	58,887	556	..	1,009	119	878		3,736	1,782	260,995	..	..	270	81	91,634		14,284	296		140,882	..	1,130	601,712	69,576	2 3¾	1905
1906	..	22,562	204	80,878	..	..	166	..	8,222	Clermont.	14,731	1,000	349,432	4,185	17,674	..	..	92,505	Chillagoe.	16,524	..		170,146	..	4,858	783,087	101,693	2 7¾	1906
1907	208	18,400	360	98,696	..	..	38	..	8,014	136	12,460	816	488,993	14,268	508	3,401	..	103,304	..	11,763	..		157,662	..	2,470	921,497	112,540	2 5¼	1907
1908	..	11,592	..	132,520	..	70	20,663	..	4,282	280	5,478	12,967	660,893	2,490	10,500	2,696	..	80,828	..	24,013	12,442		177,632	..	* 2,930	1,162,276	117,889	2 0¼	1908
1909	145	3,943	..	118,505	795	..	9,121	..	21,764	305	838	11,276	52,469	..	..	3,163	17,182	35,963	543,622	25,627	42,338		110,316	..	** 4,002	1,001,374	99,093	1 11⅞	1909
1910	..	10,838	..	115,109	4,445	135	14,552	39	82,627	161	1,777	11,274	57,624	..	..	1,139	17,854	44,542	344,095	12,760	37,068		101,787	..	§ 3,376	861,202	92,685	2 1¾	1910
1911	..	2,232	..	88,466	29,514	36	13,623	30	24,685	131	2,175	9,221	26,973	..	..	170	16,653	22,559	127,300	17,891	32,923	..	125,544	..	§§ 8,889	549,015	56,305	2 0½	1911
1912	..	6,427	930	60,784	40,394	88	17,568	..	19,728	160	5,234	7,391	85,614	..	..	1,460	30,775	20,598	164,544	11,929	22,045	..	69,386	..	¶ 4,126	569,181	66,188	2 3¾	1912
Total ozs.	3,967	181,545	19,400	870,154	76,458	349	89,179	1,384	171,882	8,333	51,227	68,973	6,020,349	86,271	44,459	14,011	82,873	703,858	1,180,620	1,008,155	153,332	506,679	2,061,315	10	92,312	13,497,125	£1,722,319	—	—

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* Includes (1908) Alice River, 40 oz.; Balcoomba and Lucky, 40 oz.; Coen and Rocky, 2,270 oz.; Hamilton, 480 oz.; and Horn Island, 100 oz.

** Includes (1909) Alice River, 11 oz.; Balcoomba, &c., 50 oz.; Coen and Rocky, 1,510 oz.; Hamilton, 2, 073 oz.; and Horn Island, 82 oz.

§ Includes (1910) Balcoomba, &c., 12 oz.; Coen and Rocky, 1748 oz.; Hamilton, 1502 oz.; Horn Island, 12 oz.; Hughenden, 58 oz.; and Palmer, 44 oz.

† Includes some Star River Returns.

‡ Estimated. Silver and Lead Returns up to 1893 were not separated.

†† Includes 247 oz. of value of £60 obtained in 1874.

§§ Includes (1911) Balcoomba, &c., 16 oz.; Batavia River, 367 oz.; Coen and Rocky, 1,074 oz.; Hamilton G.F., 422 oz.; Palmer, 10 oz.

¶ Includes (1911) Balcoomba, &c., 10 oz.; Batavia River, 220 oz.; Coen and Rocky. 1,275 oz. Hamilton, 903 oz.; Mount Emu, 120 oz.; Palmer, 20 oz.

PLATE 38. **Queensland Mineral Index. Statistical Table. Yields of TIN ORE and LEAD** (approx.) to end of **1912.** See also **Plates 45, 46, 46a, 49, and 50.** **PLATE 38.**

TIN ORE.

MINERAL FIELDS

Year.	Charters Towers.	Coen and Rocky.	Cooktown.	Chillagoe.	Croydon.	Etheridge.	Herberton.	Hodgkinson.	Kangaroo Hills.	Palmer.	Port Douglas.	Ravenswood and Star River.	Stanthorpe.	Total Tons.	Total Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	(2,240 lb.)	£
1872	..	..	..	..	..	..	..	..	..	..	..	..	1,407	1,407	109,816
1873	..	..	..	..	..	..	..	..	..	..	..	..	8,938	8,938	606,184
1874	..	..	..	..	..	..	..	..	..	..	..	..	5,702	5,702	358,550
1875	..	..	..	..	..	..	..	..	..	..	..	..	4,475	4,475	237,879
1876	..	..	..	..	..	..	..	..	..	..	..	..	4,315	4,315	187,201
1877	..	..	..	..	..	..	..	..	..	..	..	..	3,335	3,335	133,432
1878	..	..	..	..	..	..	..	..	..	..	..	..	2,849	2,849	88,366
1879	..	..	..	..	..	..	*131·50	..	..	*450	..	..	2,745·50	3,327	142,891
1880	..	..	..	..	..	..	193·50	..	..	759	..	..	2,653·50	3,606	180,977
1881	..	..	..	..	..	..	1,183·50	..	..	535	..	..	2,272·50	3,991	210,546
1882	..	..	..	..	..	..	1,810	..	..	360	..	..	2,451	4,621	281,244
1883	..	..	..	..	..	..	3,346	..	..	199	..	40	817	4,402	187,292
1884	..	..	..	..	..	..	2,352	..	..	70	..	27	934	3,383	130,460
1885	..	..	300	..	..	..	2,345	..	100	..	..	5	503	3,253	151,871
1886	..	..	148	..	..	..	2,448	..	121	..	..	6	430	3,153	162,124
1887	..	..	945	..	..	..	1,808	..	98	..	60	12	356	3,279	217,389
1888	..	..	1,051	..	..	..	1,561	..	187	..	370	3	414	3,586	200,019
1889	..	..	690	..	..	..	1,818	..	79	..	130	6	310	3,033	156,406
1890	..	..	578	..	..	..	2,081	..	..	..	34	..	277	2,970	154,963
1891	..	..	472	..	..	..	1,377	..	..	..	85	58	244	2,236	116,387
1892	..	..	421	..	..	..	1,389	..	..	..	145	188	246	2,389	123,098
1893	..	..	347	..	..	..	1,600	..	80	..	73	..	334	2,434	106,953
1894	..	..	438	..	..	..	1,960	..	169	..	97	35	172	2,871	102,277
1895	..	..	419	..	..	..	1,460	..	55	..	65	22	93	2,114	68,133
1896	..	..	257	..	..	..	1,059	..	43	..	54	45	96	1,554	49,018
1897	..	..	146	..	..	..	935	..	19	..	20	30	53	1,203	37,509
1898	..	..	145	..	..	..	770	..	10	..	..	10	90	1,025	36,502
1899	..	..	166	..	..	..	1,030	..	22	..	7	10	73	1,308	77,302
1900	..	..	159	..	7	..	789	..	61	27	8	8	64	1,123	74,041
1901	1·50	..	158	..	3·50	..	1,137	..	223	42	15	..	81	1,661	93,723
1902	6	..	105	..	2	..	1,644	2	133	70	6	5	112	2,085	116,171
1903	1·50	..	177	..	7	20	2,878	..	286	54	17	15	253	3,708·50	243,149
1904	13	..	147	..	15	14	2,875	..	349	62	19	44	385	3,923	270,276
1905	28	..	142	..	1	20	2,975	..	362	53	..	30	334	3,945	297,454
1906	50	5·50	165	..	5	65	3,854	..	275	62	..	31	310·50	4,823	490,283
1907	36·50	15	181	..	49	59	4,159	35·50	210	59	..	12·25	324	5,140·25	496,766
1908	39	..	235	..	38	30	3,795	31	143	61·50	..	16	437	4,825·50	342,191
1909	68·50	..	248	815	14·25	30	1,888	..	78	55	..	14	115	3,325·75	244,927
1910	69·50	..	296	769	5	26	1,538	..	65·75	50·25	..	5	128·25	2,952·75	243,271
1911	19	..	196	546	16	35	2,031·50	..	60·50	47·75	..	3·25	136	3,091	307,847
1912	75·25	..	272	504	15	57	1,927	..	163	37·25	..	13·25	166·25	3,230·15	364,503
Total tons	407·75	20·50	9,004	2,634	177·75	356	64,148	68·50	3,392·25	3,053·75	1,205	693·75	49,431·50	134,592·75	£8,199,391

LEAD.

MINERAL FIELDS.

Year.	Bowen.	Burketown.	Charters Towers.	Etheridge.	Gladstone.	Gympie and Kilkivan.	Herberton and Chillagoe.	Hodgkinson.	Kangaroo Hills.	Mackay.	Mount Morgan.	Mount Perry.	Ravenswood and Star River (Ollera).	Rockhampton.	Stanthorpe.	Other Sources.	Total Tons.	Total Value.	Year.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	(2,240 lb.)	£	
1872	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1872
1873	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1873
1874	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1874
1875	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1875
1876	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1876
1877	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1877
1878	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1878
1879	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1879
1880	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1880
1881	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1881
1882	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1882
1883	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1883
1884	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1884
1885	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1885
1886	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1886
1887	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1887
1888	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1888
1889	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1889
1890	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1890
1891	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1891
1892	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1892
1893	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1893
1894	137	..	..	..	..	..	314	..	..	..	..	..	..	..	..	..	451	4,370	1894
1895	..	..	..	..	..	..	278	..	..	..	..	..	..	..	..	85	363	3,634	1895
1896	..	..	..	..	..	..	596	22	..	..	..	..	..	..	..	..	618	6,180	1896
1897	..	58	..	1	..	..	270	56	..	..	..	..	..	..	..	..	385	4,117	1897
1898	..	154	..	1	..	..	93	..	..	..	..	..	..	..	..	..	248	2,480	1898
1899	..	13	..	..	..	1	38	..	..	..	..	..	4	..	..	..	56	730	1899
1900	..	59	1	1	..	..	47	..	..	..	..	..	15	..	63	19	205	3,359	1900
1901	..	117	4	2	..	..	213	..	..	..	1	2	8	..	200	14	561	6,993	1901
1902	..	44	73	..	..	..	73	..	..	1	..	..	13	2	49	12	267	2,706	1902
1903	5	..	24	..	..	..	3,677	..	..	1	..	..	14	..	45	29	3,795	43,639	1903
1904	5	..	184	..	2	..	1,754	..	8	..	..	..	27	..	58	8	2,046	24,560	1904
1905	3	7	404	10	..	..	1,901	..	..	..	..	..	13	..	74	10	2,422	33,212	1905
1906	6	2	497	198	..	..	1,868	38	..	..	..	..	6	..	116	78	2,809	49,884	1906
1907	5·50	4	361	133	1·50	..	4,370	135	2	..	..	..	27	..	95·50	23	5,157·50	75,330	1907
1908	8	..	364	..	2·25	..	6,605	10	..	..	..	..	12·75	..	107	..	7,109	95,239	1908
1909	1	..	451	60	..	..	4,697·50	..	..	..	..	..	51	..	69·25	..	5,329·75	68,543	1909
1910	1	..	414	504	..	..	1,419	..	..	..	..	..	2·50	..	51	..	2,391·50	30,401	1910
1911	·50	..	393·25	229	1·25	..	1,010·50	..	..	..	..	..	..	..	81·50	55	1,771	23,460	1911
1912	5·50	20·50	189	204·50	1·25	..	2,645·50	..	..	..	..	..	..	..	35·50	6	3,107·75	55,667	1912
Total tons	177·50	478·50	3359·25	1343·50	8·25	1	31,869·50	261	10	2	1	2	193·25	2	1,044·75	339	39,092·50	£534,504	—

* Total yields up to end of 1879.

Queensland Mineral Index. Statistical Table. Yields of GOLD (approx.) to end of 1912. See also Plates 46, 46a, and 47. PLATE 36.

NOTE.—Value of an oz. fine gold = £4 4s. $11\frac{5}{11}$d., therefore Ounces × 4·2477 = Value in pounds.

Year.	Ch. Towers and Cape River.	Rockhampton, Mt. Morgan, &c.*	Gympie.	Palmer.	Croydon.	† Other Goldfields.	Ravenswood.	Etheridge and Woolgar.	Hodgkinson.	Eidsvold.	Coen.	Hamilton.	Total.	Total.	Year.
	Fine oz.	Fine oz.	Fine oz.	Fine oz.	Fine oz.	Fine oz.	Fine oz.	Fine oz.	Fine oz.	Fine oz.	Fine oz.	Fine oz.	Fine oz.	£	
To end of 1877	493,558	Prior to 1883 the gold from Rockhampton was included in returns under Cloncurry, Calliope, &c. The latter are now placed under "other goldfields."	51,498	819,697	..	156,790	154,094	95,945	47,522	..	..	..	1,819,104	7,727,058	To end of 1877
1878	59,482		34,248	116,759	..	9,197	10,295	5,006	35,567	..	..	..	270,554	1,149,240	1878
1879	63,715		31,684	87,399	..	10,546	12,231	10,946	26,954	..	..	..	243,475	1,034,215	1879
1880	67,773		35,490	61,617	..	12,791	10,445	14,385	19,940	..	..	..	222,441	944,869	1880
1881	65,410		55,915	48,930	..	17,918	8,160	16,665	12,433	..	..	..	225,431	957,570	1881
1882	63,242		41,456	35,161	..	14,647	6,973	13,234	10,296	..	..	..	185,009	785,868	1882
1883	55,264	3,209	53,408	22,684	..	8,997	10,406	13,396	6,096	..	..	..	173,460	736,811	1883
1884	86,228	19,822	92,327	14,265	..	6,401	11,360	13,577	6,147	..	..	..	250,127	1,062,471	1884
1885	106,981	12,879	73,828	11,704	..	5,900	14,120	19,854	4,871	..	..	..	250,137	1,062,514	1885
1886	112,166	47,957	73,004	7,783	1,514	7,786	7,400	18,101	3,777	..	..	..	279,488	1,187,189	1886
1887	117,603	82,338	84,168	6,327	20,018	13,182	8,316	14,857	2,081	..	..	..	348,890	1,481,990	1887
1888	106,839	113,704	88,263	14,886	28,670	11,853	8,537	17,407	1,916	5,897	..	..	397,972	1,690,477	1888
1889	126,666	314,356	95,243	15,282	31,799	10,113	13,322	12,914	1,600	13,310	..	..	634,605	2,695,629	1889
1890	127,426	218,372	64,571	9,436	37,848	11,478	12,849	17,360	882	13,597	..	..	513,819	2,182,563	1890
1891	183,830	141,685	50,027	11,230	37,949	19,845	11,063	12,648	540	9,159	..	..	477,976	2,030,312	1891
1892	216,679	121,514	68,705	7,611	36,781	19,148	9,858	15,616	990	12,639	..	..	509,541	2,164,391	1892
1893	216,660	118,291	65,540	2,960	43,393	25,725	8,200	19,370	1,509	6,491	2,203	..	510,342	2,167,794	1893
1894	221,544	116,295	92,581	3,124	43,062	31,208	14,682	16,549	1,865	4,203	3,482	..	548,595	2,330,282	1894
1895	200,916	127,793	64,999	2,381	41,457	31,809	11,551	16,179	1,848	4,027	3,325	..	506,285	2,150,561	1895
1896	181,923	147,853	60,615	3,815	43,018	25,511	12,420	16,548	2,464	4,980	2,999	..	502,146	2,132,980	1896
1897	242,641	170,368	78,873	2,351	34,148	33,681	14,698	14,649	2,642	3,570	3,328	..	600,949	2,552,668	1897
1898	272,368	167,933	86,251	2,909	26,103	42,764	19,311	13,774	3,435	9,026	3,613	..	647,487	2,750,348	1898
1899	319,572	177,422	73,147	2,708	31,770	23,797	18,016	11,347	3,496	4,612	2,340	..	668,227	2,838,440	1899
1900	283,237	199,262	76,309	2,415	48,045	17,042	24,832	10,047	3,300	2,099	1,139	8,300	676,027	2,871,579	1900
1901	235,302	157,099	98,675	2,483	34,147	20,446	26,868	10,146	3,999	697	3,005	5,515	598,382	2,541,764	1901
1902	265,244	146,906	120,662	2,421	28,355	17,608	40,969	7,747	4,033	339	1,854	4,325	640,463	2,720,512	1902
1903	285,771	120,758	147,622	1,606	31,790	18,359	38,273	11,682	4,568	256	1,933	5,928	668,546	2,839,801	1903
1904	262,018	133,195	126,710	1,376	33,841	19,205	40,635	8,914	4,528	797	2,654	5,278	639,151	2,714,939	1904
1905	226,696	128,975	116,342	1,130	33,746	19,820	42,465	8,833	3,220	911	6,894	3,588	592,620	2,517,289	1905
1906	205,632	131,939	108,916	645	23,963	18,022	36,027	9,139	3,586	671	3,522	2,574	544,636	2,313,465	1906
1907	175,552	146,574	64,227	640	13,411	17,132	34,830	8,102	1,598	253	1,029	2,534	465,882	1,978,940	1907
1908	162,270	156,922	62,771	1,498	8,767	13,883	35,806	17,664	2,003	..	2,010	1,491	465,085	1,975,554	1908
1909	171,654	151,716	65,551	685	7,513	13,036	28,727	12,026	1,669	..	1,377	1,623	455,577	1,935,167	1909
1910	147,484	166,835	59,205	606	7,326	14,089	21,545	19,936	1,476	26	1,637	1,235	441,400	1,874,946	1910
1911	133,833	137,416	50,954	214	7,906	23,395	20,362	9,614	611	66	1,043	750	386,164	1,640,319	1911
1912	96,046	143,976	39,508	278	8,363	19,580	22,629	15,071	836	..	855	804	347,946	1,477,979	1912
Total	6,359,225	4,023,364	2,653,293	1,327,016	744,703	782,704	822,275	569,248	234,298	97,626	50,242	43,945	17,707,939	—	Total
Total	£27,012,253	17,090,154	11,270,466	5,636,802	3,163,297	3,324,711	3,492,799	2,418,010	995,234	414,688	213,413	186,667	—	£75,218,494	Total

* See under ROCKHAMPTON in Text for *Included Fields* and for *Gold Exported*. † *Includes* Cloncurry, Calliope, Clermont, Paradise, Normanby, &c. *See* other localities under "OTHER GOLDFIELDS" in Text.

Queensland Mineral Index. Statistical Table. Yields of COPPER

Showing the Annual and Total QUANTITIES of Copper Produced on each Field,

MINERAL

Year.	Bowen.	Burketown.	Charters Towers.	Clermont (Peak Downs).	Cloncurry.	Chillagoe.	Etheridge.	Gladstone.	Gympie and Kilkivan.	Herberton.	Kangaroo Hills.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1860	..	..	..	1*	..	..	..	..	..	..	..
1861	..	..	..	49*	..	..	..	..	..	..	..
1862	..	..	..	268*	..	..	..	..	..	..	..
1863	..	..	..	1,100*	..	..	..	..	..	..	..
1864	..	..	..	2,000*	..	..	..	..	..	..	..
1865	..	..	..	721*	..	..	..	..	..	..	..
1866	..	..	..	3,168*	..	..	..	..	..	..	..
1867	..	..	..	6,140*	..	..	..	..	..	..	..
1868	..	..	..	9,033	..	..	..	..	..	..	..
1869	..	..	..	6,298	..	..	..	..	..	..	..
1870	..	..	..	1,335	..	..	..	..	..	..	..
1871	..	..	..	2,490	..	..	..	..	..	..	..
1872	..	..	..	2,427	..	..	..	..	21	..	..
1873	..	..	..	1,404	..	..	..	..	50	..	..
1874	..	..	..	1,476	..	..	..	..	70	..	..
1875	..	10	..	1,194	..	..	..	..	..	..	..
1876	..	..	..	1,530	..	..	..	..	..	..	..
1877	..	..	..	1,680	..	..	..	..	..	..	..
1878	..	..	..	474	..	..	..	..	..	..	..
1879	..	..	..	527	..	..	..	..	..	..	..
1880	..	..	..	226	..	..	..	..	..	..	..
1881	..	..	..	271	..	..	..	..	..	..	..
1882	..	..	..	1,424	..	..	..	..	..	..	..
1883	..	..	..	1,640	..	..	..	..	..	..	..
1884	..	..	..	..	400	..	..	..	..	..	..
1885	..	..	..	..	1,340	..	..	..	..	..	..
1886	..	..	..	..	900	..	..	..	..	..	..
1887	..	..	..	..	1,010	..	..	..	..	..	..
1888	..	..	..	..	..	..	..	..	..	..	..
1889	..	..	..	..	..	..	..	..	..	100	..
1890	..	..	..	..	..	..	..	..	..	100	..
1891	..	..	..	..	..	..	..	..	..	98	..
1892	..	..	..	..	..	..	..	..	..	19	..
1893	..	..	..	..	..	..	..	..	..	99	..
1894	..	..	..	..	..	..	..	..	..	317	..
1895	..	..	..	..	..	..	..	..	..	297	..
1896	..	..	..	..	..	..	..	..	..	409	..
1897	..	..	..	..	..	..	..	..	..	**159	..
1898	..	10	..	..	5	..	..	..	..	31	..
1899	..	36	..	..	2	..	..	·50	..	17	..
1900	..	4	1	..	13	..	..	4	2	21	..
1901	..	..	13	..	236	..	104	2	17	2,259	23
1902	..	..	..	..	51	..	..	..	1	2,498	..
1903	4	1	10	..	148	..	..	7	18	2,757	6
1904	3	..	4	1	403	..	30	1	21	1,845	21
1905	4·75	..	9	..	† 457	..	..	142	15·50	4,824	..
1906	4	32	33	17	590	..	8	511	65·50	4,286	50
1907	..	..	195	†† 122	692	..	3	482·25	33	4,188	***25
1908	..	..	325	..	1,321	..	·75	168	63	3,875	36
1909	..	..	129·50	‡‡ 1	2,360·75	2,751	633 75	1	28·25	218	..
1910	1	..	181·50	..	3,429·50	1,839	1,313	504·50	15	157	..
1911	..	..	30·75	..	8,510·75	789	1,096·50	2,013	5·50	154	..
1912	..	..	26	4·75	10,435	417	1,241·75	1,765·25	3·25	189	..
Totals	16·75	93	957·75	47,021·75	32,304	5,796	4,430·75	5,601·50	429	28,917	161

* All the Copper produced before 1868 is credited to Peak Downs, but this requires confirmation.

†† Includes 8 tons from Biggenden. ‡‡ From Biggenden.

(approx.) to end of **1912.** See also **Plates 45, 46, 46a, and 51.** **PLATE 39.**

and the Annual and Total QUANTITIES and VALUES for the Whole State.

FIELDS.

Mackay.	Mount Morgan.	Mount Perry (Tenningering).	Port Douglas.	Ravenswood and Star.	Rockhampton.	Stanthorpe.	Other Sources.	Total Tons. (2,240 lb.)	Total Value.	Year.
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£	
..	..	..	..	..	..	..	Localities not specified.	1	50	**1860**
..	..	..	..	..	..	..		49	1,450	**1861**
..	..	..	..	..	..	..		268	10,332	**1862**
..	..	..	..	..	..	..		1,100	30,000	**1863**
..	..	..	..	..	..	..		2,000	60,000	**1864**
..	..	..	..	..	..	..		721	58,440	**1865**
..	..	..	..	..	..	..		3,168	91,872	**1866**
..	..	..	..	..	..	..		6,140	84,200	**1867**
..	..	..	..	..	..	..		9,033	73,020	**1868**
..	..	..		..	12	..		6,310	76,230	**1869**
..	..	..	..	..	..	..		1,335	80,795	**1870**
..	..	..	..	..	..	..		2,490	174,300	**1871**
..	..	..	..	..	..	..		2,448	196,000	**1872**
..	..	987	..	..	..	..		2,441	185,808	**1873**
..	..	682	..	..	..	..		2,228	164,040	**1874**
..	..	470	..	..	..	..	..	1,674	121,980	**1875**
..	..	520	..	..	55	..	..	2,105	147,000	**1876**
..	..	160	..	..	119	..	..	1,959	167,337	**1877**
..	..	100	..	..	..	..	..	574	35,126	**1878**
..	..	40	..	..	..	..	..	567	34,791	**1879**
..	..	100	..	..	..	..	..	326	20,137	**1880**
..	..	60	..	..	..	..	..	331	19,637	**1881**
..	..	300	..	..	..	..	..	1,724	14,982	**1882**
..	..	160	..	..	..	..	..	1,800	21,080	**1883**
..	..	1,251	..	2	..	..	..	1,653	30,872	**1884**
..	..	..	..	..	..	..	..	1,340	18,920	**1885**
..	..	..	..	..	..	..	..	900	7,000	**1886**
..	..	..	..	..	..	..	..	1,010	7,600	**1887**
..	..	1,096	..	30	..	..	..	1,126	9,248	**1888**
..	..	979	..	..	..	..	..	1,079	12,000	**1889**
..	..	85	..	..	..	..	..	185	3,000	**1890**
..	..	..	..	..	..	..	..	98	865	**1891**
..	..	42	..	..	..	20	..	81	2,461	**1892**
..	..	98	..	..	..	100	..	297	3,822	**1893**
..	..	98	..	..	..	..	..	415	9,582	**1894**
..	..	..	108	..	..	..	29	434	13,097	**1895**
..	..	..	38	..	..	60	73	580	21,042	**1896**
..	..	..	42	..	4	72	11	288	12,645	**1897**
..	5	2	..	9	..	..	..	62	2,166	**1898**
..	..	31	1	8	..	64	2	161·50	9,498	**1899**
1	..	40	..	4	10	48	236	384	23,040	**1900**
17	1	273	..	11	10	35	60	3,061	194,227	**1901**
19	31	1,057	..	33	23	43	28	3,784	189,200	**1902**
3	135	1,775	..	7	12	30	3	4,916	285,122	**1903**
..	481	1,474	..	24	3	43	16	4,370	257,896	**1904**
16	237	1,402·50	..	37	4	71	1	7,220·75	503,547	**1905**
26	2,567	1,722	..	5	43	116·50	1	10,077	916,546	**1906**
117	4,713	1,973	..	16	20	176	1	12,756·25	1,028,179	**1907**
79	6,301	1,596	..	7	839	87	..	14,697·75	882,901	**1908**
85·25	6,270	670	..	7	1,274	61·25	3·50	14,494·25	853,196	**1909**
29	6,338	921·25	..	11·25	1,593	53·75	..	16,386·75	932,489	**1910**
9·50	5,264	562·50	..	88·25	1,834	25	·75	20,383·50	1,151,351	**1911**
120	7,068·5	443	..	32·50	1,345	39·25	..	23,130·25	1,698,280	**1912**
521·75	39,411·5	21,170·25	189	332	7,200	1,144·75	465·25	196,163	10,948,399	Total

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† Includes 1 ton from Cooktown. ‡ Includes 1 ton from Croydon. ** Includes 5 tons from Eidsvold.

*** Includes 9 tons from Hughenden.

Queensland Mineral Index. Statistical Table. Yields of ANTIMONY, BISMUTH,

Year.	ANTIMONY.													
	MINERAL FIELDS.													
	Charters Towers.	Cooktown.	Gympie and Kilkivan.	Herberton.	Hodgkinson.	Eidsvold.	Kangaroo Hills.	Ravenswood.	Total Tons.	Total Value.	Biggenden.	Bowen.	Chillagoe.	Etheridge.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	(2,240 lb.)	£	Tons.	Tons.	Tons.	Tons.
1873	..	..	15	..	..	..	..	..	15	157	..	..	..	..
1874	..	..	207	..	..	..	..	..	207	2,141	..	..	..	..
1875	..	..	60	..	..	..	..	..	60	360	..	..	..	..
1876	..	..	18	..	..	..	..	..	18	216	..	..	..	..
1877	..	..	101	..	..	..	..	..	101	606	..	..	..	..
1878	..	..	27	..	..	..	..	..	27	405	..	..	..	..
1879	..	..	4	..	..	..	..	..	4	40	..	..	..	..
1880	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1881	..	..	163	..	192	..	..	..	355	3,665	..	..	..	..
1882	..	..	..	..	251	..	..	..	251	4,447	..	..	..	..
1883	..	..	127	..	400	..	..	..	527	6,550	..	..	..	..
1884	..	..	198	..	550	..	..	..	748	6,469	..	..	..	..
1885	..	..	..	..	70	..	..	..	70	300	..	..	..	..
1886	..	..	110	..	..	..	..	..	110	400	..	..	..	..
1887	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1888	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1889	..	..	..	..	58	..	..	..	58	215	8	..	..	..
1890	..	..	..	..	172	..	..	..	172	4,816	25	..	..	..
1891	..	165	..	..	52	..	..	..	217	3,625	78	1	..	..
1892	..	..	..	..	26	..	..	..	26	278	90	..	..	..
1893	..	..	..	..	30	..	..	..	30	288	55	..	..	..
1894	..	..	..	..	28	..	..	..	28	280	35	..	..	..
1895	..	..	..	..	..	..	..	..	..	..	40	..	..	..
1896	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1897	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1898	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1899	..	40	..	..	..	..	..	..	40	200	..	..	..	..
1900	..	..	..	..	..	..	..	..	..	..	3	..	..	..
1901	..	..	..	..	..	..	..	..	..	..	14	..	..	..
1902	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1903	..	..	..	..	..	..	..	..	..	..	7	..	..	..
1904	..	..	..	..	..	..	..	..	..	..	16	..	..	..
1905	..	..	..	3	21	..	..	..	24	174	3·25	..	..	1
1906	2	..	..	49	457	..	..	22	530	6,917	..	..	..	..
1907	..	..	6·50	20	390	58	2	35	511·50	7,863	..	..	..	·15
1908	..	..	..	42	..	..		..	42	469	11·50	..	..	..
1909	..	..	..	..	..	..	Other sources	..	..	..	6·75	..	3·50	..
1910	..	..	..	..	..	..		..	..	..	12·20	..	7·25	..
1911	..	..	..	..	..	..	9·50	..	9·50	72	5·50	..	4·25	..
1912	..	..	..	..	..	..	..	..	..	..	1·60	..	3·60	·35
Total	2	205	1,036·50	114	2,697	58	11·50	57	4,181	£50,953	411·80	1	18·60	1·50

and **MANGANESE** to end of **1912.** See **Plates 45, 46-46a, and 52.** **PLATE 40.**

BISMUTH.								MANGANESE.					
MINERAL FIELDS.								MINERAL FIELDS.					
Herberton.	Hodgkinson.	Kangaroo Hills.	Ravenswood.	Sellheim.	Star River.	Total Tons.	Total Value.	Gladstone.	Gympie and Kilkivan.	Rockhampton.	Total Tons.	Total Value.	Year.
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£	Tons.	Tons.	Tons.	(2,240 lb.)	£	
..	..	..	..	..	..	..	..	..	..	..	..	..	1873
..	..	..	..	..	..	..	..	..	..	..	..	..	1874
..	..	..	..	..	..	..	..	..	..	..	..	..	1875
..	..	..	..	..	..	..	..	..	..	..	..	..	1876
..	..	..	..	..	..	..	..	..	..	..	..	..	1877
..	..	..	..	..	..	..	..	..	..	..	..	..	1878
..	..	..	..	..	..	..	..	..	..	..	..	..	1879
..	..	..	..	..	..	..	..	..	..	..	..	..	1880
..	..	..	..	..	..	..	..	..	..	..	..	..	1881
..	..	..	..	..	..	..	..	..	..	..	..	..	1882
..	..	..	..	..	..	..	..	..	..	..	..	..	1883
..	..	..	..	..	..	..	..	..	..	..	..	..	1884
..	..	..	..	..	..	..	..	..	..	..	..	..	1885
..	..	..	..	..	..	..	..	..	..	..	..	..	1886
..	..	..	..	..	..	..	..	..	..	..	..	..	1887
..	..	..	..	..	..	..	..	..	..	..	..	..	1888
..	..	..	..	44	..	52	8,780	..	..	..	..	..	1889
..	..	..	..	6	..	31	1,481	..	..	..	..	..	1890
..	..	..	..	38	..	117	11,070	..	..	..	..	..	1891
..	..	..	..	40	..	130	16,000	..	..	..	..	..	1892
..	..	..	..	19	..	74	10,676	..	..	..	..	..	1893
..	..	..	..	30	..	65	6,270	140	..	..	140	400	1894
..	·45	..	..	18	..	58·45	3,258	343	..	..	343	983	1895
..	..	..	..	..	..	..	..	300	..	..	300	900	1896
..	·80	..	..	..	..	·8	134	300	..	97	397	1,506	1897
1	..	..	..	7	..	8	660	30	..	37	67	251	1898
..	2	..	..	..	..	2	494	735	..	..	735	2,831	1899
..	5	..	..	..	..	8	1,865	55	..	20	75	205	1900
..	6	..	..	..	..	20	3,684	218	..	..	218	795	1901
..	1	..	..	..	..	1	123	4,600	..	..	4,600	16,989	1902
..	4	..	..	..	..	11	2,523	1,320	..	..	1,320	5,332	1903
·55	2	..	1·65	..	·25	20·45	3,581	830	..	..	830	3,540	1904
2·50	7	·05	..	..	1·50	15·3	5,368	1,517	..	..	1,517	5,925	1905
1·50	5	..	..	..	..	6·5	1,882	1,113	..	..	1,113	4,391	1906
·40	5·50	..	..	..	·20	6·25	1,806	1,116	..	..	1,116	4,464	1907
3	8·25	..	..	..	..	22·75	10,595	1,368	13	..	1,381	5,524	1908
..	..	..	..	..	..	10·25	2,771	435	168	..	603	2,124	1909
1·50	..	..	..	..	·05	21	9,708	786	6	..	792	3,127	1910
..	..	..	..	..	..	9·75	5,525	1,149	..	..	1,149	4,021	1911
..	..	..	..	..	·40	5·95	2,835	308	..	..	308	1,281	1912
10·45	47	·05	1·65	202	2·40	696·45	£111,089	16,663	187	154	17,004	£64,589	Total

Queensland Mineral Index. **Yields of LIMESTONE** to end of **1912**. See also **Plates 45, 46-46a, and 53.** **PLATE 41.**

LIMESTONE.

MINERAL FIELDS AND DISTRICTS.

Year.	Biggenden.	Bundaberg.	Charters Towers.	Chillagoe.	Eidsvold.	Etheridge.	Gladstone.	Herberton.	Mount Morgan.	Mount Perry.	Percy.	Rockhampton.	St. Lawrence.	Stanthorpe.	Star River.	Warwick.	Total Tons.	Total Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	(2,240 lb.)	£
1898	..	..	..	..	..	..	..	..	166	..	..	..	..	..	..	..	166	33
1899	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1900	..	..	3,594	..	..	70	..	..	..	..	..	..	..	..	..	..	3,664	3,862
1901	..	..	1,897	..	..	..	1,500	..	..	..	..	..	700	1,417	..	1,000	6,514	4,901
1902	200	..	1,357	..	..	..	1,910	..	..	..	..	..	..	176	..	1,100	4,743	3,672
1903	15	..	2,126	..	..	242	108	3,698	..	6,460	..	264	..	699	..	..	13,612	8,060
1904	..	..	2,330	..	33	87	4,443	4,017	..	6,374	..	361	..	1,121	..	..	18,766	10,816
1905	..	200	820	..	..	30	2,363	10,678	..	..	8,000	290	..	1,288	..	1,388	25,057	15,863
1906	..	..	666	..	..	40	3,522	12,097	..	655	8,603	34,600	..	1,357	..	316	61,856	23,364
1907	..	..	809	..	..	150	3,050	14,927	..	932	..	68,266	..	1,467	..	377	89,978	35,808
1908	..	..	777	..	..	..	10,860	18,777	..	..	..	113,225	..	1,867	..	800	146,306	51,706
1909	..	..	523	14,550	..	300	3,574	..	..	..		122,586	..	973	..	520	142,996	35,135
1910	..	..	..	15,557	..	300	5,373	..	..	..	Cloncurry.	120,426	..	1,906	547	250	144,359	34,144
1911	..	..	..	11,870	..	..	3,721	..	..	910	3,269	92,407	..	1,518	580	400	114,675	27,887
1912	..	..	..	12,929	..	..	4,341	..	..	..	1,974	76,610	..	401	520	400	97,175	24,176
Total	215	200	14,899	54,906	33	1,219	44,765	64,194	166	15,331	21,846	629,005	700	14,190	1,647	6,551	869,867	£279,427

Queensland Mineral Index. **Yields of IRONSTONE, GRAPHITE, and FIRECLAY** to end of **1912.** **PLATE 41**—*continued.*

	IRONSTONE.									GRAPHITE.				FIRECLAY.			
Year.	Chillagoe.	Mount Perry.	Stanthorpe.	Gladstone.	Herberton.	Mount Morgan.	Rockhampton.	Total Tons.	Total Value.	Year.	Maryborough.	Total Tons.	Total Value.	Gladstone.	Mount Morgan.	Total Tons.	Total Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	(2,240 lb.)	£		Tons.	(2,240 lb.)	£	Tons.	Tons.	(2,240 lb.)	£
1898	..	..	..	..	..	..	..	..	..	1898	..	..	..	..	..	..	..
1899	..	..	..	..	..	..	..	..	..	1899	..	..	..	..	..	..	..
1900	..	..	..	..	..	..	..	..	..	1900	..	..	..	..	..	..	..
1901	..	..	430	..	..	..	..	430	215	1901	..	..	..	..	..	..	..
1902	..	..	..	..	..	..	..	..	..	1902	..	..	..	..	..	..	..
1903	..	1,165	12	..	8,361	..	..	9,808	3,852	1903	..	..	..	..	..	..	..
1904	..	..	7	..	4,424	..	..	4,431	1,663	1904	..	..	..	..	..	..	..
1905	..	..	57	..	4,285	..	..	4,342	3,600	1905	32	32	272	..	..	..	..
1906	..	..	..	867	4,534	25,000	1,000	31,401	14,114	1906	31	31	200	..	..	..	..
1907	..	..	96	908	6,757	611	27,484	35,856	24,327	1907	65	65	200	..	1,400	1,400	560
1908	..	..	16	..	3,347	..	48,231	51,594	51,167	1908	20	20	60	..	2,680	2,680	1,072
1909	1,037	..	154	..	..		47,445	48,636	48,221	1909	..	..	..	139	2,938	3,077	1,366
1910	3,404	..	..	..	..	Cloncurry.	33,734	37,138	35,429	1910	..	..	..	..	4,186	4,186	1,675
1911	2,281	..	..	..	..	9,873	8,485	20,639	11,157	1911	..	..	..	..	5,812	5,812	2,325
1912	2,965	..	34	..	..	7,774	4,753	15,526	9,035	1912	..	..	..	..	6,336	6,336	2,535
Total	9,687	1,165	806	1,775	31,978	43,258	171,132	259,801	£202,780	Total	148	148	£732	139	23,352	23,491	£9,533

Queensland Mineral Index. **Yields of WOLFRAM** to end of **1912.** See also **Plates 45, 46-46a, and 54.** **PLATE 42.**

WOLFRAM.

MINERAL FIELDS.

Year.	Bowen.	Bundaberg.	Charters Towers.	Chillagoe.	Coen and Rocky.	Cooktown.	Etheridge.	Herberton.	Hodgkinson.	Kangaroo Hills.	Gladstone.	Palmer.	Pascoe River.	Port Douglas.	Ravenswood and Star River (Ollera).	Stanthorpe.	Total Tons.	Total Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	(2,240 lb.)	£
1894	..	..	..	..	..	..	..	..	65	..	..	..	..	2	..	..	67	710
1895	..	..	..	..	..	..	..	21	12	..	..	..	..	4	..	..	37	662
1896	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	3	60
1897	..	..	..	..	..	..	..	..	13	..	..	..	..	..	..	..	13	195
1898	..	..	..	..	..	..	..	68	..	10	..	..	..	..	..	..	78	2,540
1899	..	..	..	..	..	..	..	..	240	..	..	..	..	2	17	..	259	10,060
1900	..	..	..	..	..	1	..	..	188	..	..	..	..	..	·50	..	189·50	6,605
1901	..	..	..	..	..	..	..	..	72	..	..	..	..	..	..	..	72	1,145
1902	..	..	..	..	..	..	..	..	55	..	..	..	..	..	..	..	55	1,167
1903	..	..	..	..	..	..	..	..	188	..	..	..	..	..	9	..	197	7,870
1904	..	·50	·40	..	3	4	..	987	495	7	..	..	..	..	42	..	1,538·90	161,635
1905	..	5	..	..	12	4	..	826	526	12	..	..	..	..	24	..	1,409	99,873
1906	..	..	..	..	12	2	3	274	432	18	..	..	..	..	27	..	768	64,136
1907	..	..	..	..	..	..	15	134	409	9	..	·20	31	..	16	1	615·20	89,767
1908	..	..	..	..	..	·50	2	164	217	12	..	..	11·25	..	13	1	420·75	32,792
1909	..	..	..	355	..	6	3	208	..	10	..	..		..	24·25	..	606·25	56,348
1910	1·25	..	..	497·75	..	5·25	1	291	..	23	·25	..	Clermont.	..	36·25	..	855·75	88,116
1911	..	..	..	215·75	..	1·75	·65	293	..	9·5	..	..	5	..	13·75	..	539·40	54,163
1912	..	..	..	173·50	..	2·75	..	432	..	4·5	..	..	2·75	..	11	..	626·50	57,821
Totals	1·25	5·50	·40	1,242	27	27·25	24·65	3,698	2,912	118	·25	·20	50	8	233·75	2	8,350·25	£735,665

Queensland Mineral Index. Yields of SCHEELITE and MOLYBDENITE to end of 1912. PLATE 42—*continued.*

SCHEELITE.

MINERAL FIELDS.

Year.	Chillagoe.	Herberton.	Hodgkinson.	Total Tons.	Total Value.
	Tons.	Tons.	Tons.	Tons.	£
1894	..	..	..	..	..
1895	..	..	..	..	..
1896	..	..	..	..	..
1897	..	..	..	..	..
1898	..	..	..	..	..
1899	..	..	..	..	..
1900	..	..	..	..	..
1901	..	..	..	..	..
1902	..	..	..	..	..
1903	..	..	..	..	..
1904	..	1·15	..	1·15	75
1905	..	..	4	4	330
1906	..	..	4·50	4·50	347
1907	..	..	2·25	2·25	320
1908	..	..	..	..	20
1909	..	..	..	..	..
1910	1·75	1·50	..	3·25	286
1911	5	..	..	5	394
1912	..	..	..	..	..
Totals	6·75	2·65	10·75	20·15	£1,772

MOLYBDENITE.*

MINERAL FIELDS.

Year.	Herberton.	Hodgkinson.	Chillagoe.	Ravenswood.	Star River (Ollera).	*Total Tons.	Total Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	(2,240 lb.)	£
1894	..	..	..	..	..	..	..
1895	..	..	..	..	..	..	..
1896	..	..	..	..	..	..	..
1897	..	..	..	..	..	..	..
1898	..	..	..	..	..	..	..
1899	..	..	..	..	..	..	..
1900	..	11	..	..	..	11	561
1901	..	26	..	..	..	26	1,609
1902	..	41	..	..	..	41	5,502
1903	..	24	..	..	..	24	2,100
1904	..	21	..	·65	..	21·65	2,746
1905	1·50	83	..	..	·25	84·75	10,454
1906	13	115·50	..	..	·65	129·15	17,034
1907	3·50	73·50	..	..	·15	77·15	9,660
1908	·15	168·50	..	..	·20	168·85	14,686
1909	..	..	155·50	..	2·25	157·75	13,820
1910	27·75	..	123·25	..	·05	151·05	16,914
1911	31	..	196·75	..	·75	228·50	24,842
1912	13	..	280	..	·80	293·80	33,775
Totals ..	89·90	563·50	755·50	·65	5·10	1,414·65	153,703

* Returns also include some Wolfram and Bismuth.

Queensland Mineral Index. Statistical Table. Yields of COAL, OPALS, and

COAL.

COAL FIELDS.

Year.	Ipswich and Darling Downs.	Brisbane (Nundah).	Wide Bay (Burrum).	Clermont.	Rockhampton (Bluff, &c.).	Gladstone (Callide).	Total Tons.	Total Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	(2,240 lb.)	£
1860	12,327	..	..	..	..	..	12,327	9,244
1861	14,212	..	..	..	..	..	14,212	9,922
1862	24,067	..	..	..	..	..	24,067	19,253
1863	24,000	..	..	..	..	..	24,000	15,000
1864	25,000	..	..	..	..	..	25,000	15,500
1865	33,000	..	..	..	..	..	33,000	19,425
1866	39,316	..	..	..	..	..	39,316	21,249
1867	17,988	..	..	..	..		17,988	9,566
1868	19,611	..	..	..	..	..	19,611	11,519
1869	11,120	..	..	..	..	..	11,120	5,907
1870	22,639	..	..	..	..	..	22,639	12,311
1871	17,000	..	..	..	..	..	17,000	9,407
1872	27,727	..	..	..	..	..	27,727	16,120
1873	33,613	..	..	..	..	..	33,613	22,052
1874	43,443	..	..	..	..	..	43,443	19,700
1875	32,107	..	..	..	..	..	32,107	14,835
1876	50,627	..	..	..	..	..	50,627	26,470
1877	60,918	..	..	..	..	..	60,918	25,659
1878	52,580	..	..	..	..	..	52,580	21,272
1879	55,012	..	..	..	..	..	55,012	22,759
1880	58,052	..	..	..	..	..	58,052	24,573
1881	65,612	..	..	..	..	..	65,612	29,033
1882	74,436	..	..	..	..	..	74,436	33,592
1883	98,310	..	6,440	..	..	..	104,750	52,894
1884	114,577	..	6,150	..	..	..	120,727	60,025
1885	182,784	..	26,914	..	..	..	209,698	87,228
1886	189,608	..	39,048	..	..	..	228,656	95,243
1887	193,286	..	45,527	..	..	..	238,813	97,460
1888	254,778	..	56,634	..	..	..	311,412	127,947
1889	217,240	..	48,267	..	..	..	265,507	121,118
1890	276,063	..	58,781	3,500	..	..	338,344	157,077
1891	222,766	..	42,516	6,321	..	..	271,603	128,198
1892	215,535	..	42,268	7,283	..	..	265,086	123,308
1893	202,429	..	54,075	7,899	..	..	264,403	125,340
1894	207,672	..	56,035	6,998	..	..	270,705	114,593
1895	239,712	..	75,299	8,057	..	..	323,068	132,530
1896	280,094	..	80,320	10,976	..	..	371,390	154,987
1897	277,172	..	77,301	3,934	..	..	358,407	139,889
1898	310,444	..	91,890	5,600	..	..	407,934	150,493
1899	373,655	..	111,414	8,940	..	..	494,009	175,715
1900	379,504	..	110,849	6,774	5	..	497,132	173,705
1901	420,500	..	111,972	7,000	..	..	539,472	189,877
1902	390,603	..	105,181	5,747	..	..	501,531	172,286
1903	403,462	..	99,292	4,742	250	55	507,801	164,798
1904	408,186	..	99,056	4,773	..	..	512,015	166,536
1905	422,642	..	98,594	3,557	4,533	..	529,326	155,476
1906	509,989	70	86,634	2,570	7,509	..	606,772	173,282
1907	591,174	100	77,921	2,725	11,352	..	683,272	222,135
1908	591,535	1,500	84,817	4,697	13,783	..	696,332	244,922
1909	642,864	133	92,573	5,469	15,538	..	756,577	270,726
1910	729,012	..	93,055	34,707	14,392	..	871,166	322,822
1911	709,183	..	98,827	67,325	16,233	..	891,568	323,998
1912	689,471	..	119,732	79,501	13,447	15	902,166	338,264
Totals	11,558,659	1,803	2,197,382	299,095	97,042	70	14,154,049	£5,377,240

SAPPHIRES to end of 1912. See also Plates 45, 46-46a, and 55. PLATE 43-44.

OPALS.						SAPPHIRES.*		
OPAL FIELDS.						SAPPHIRE FIELD.		
Cunnamulla.	Opalton.	Paroo.	Windsor.	Eromanga.	Total Value.	Anakie (Clermont).	Total Value.	Year.
£	£	£	£	£	£	£	£	
..	..	..	..	..	..	..	..	1860
..	..	..	..	..	..	..	..	1861
..	..	..	..	..	..	..	..	1862
..	..	..	..	..	..	..	..	1863
..	..	..	..	..	..	..	..	1864
..	..	..	..	..	..	..	..	1865
..	..	..	..	..	..	..	..	1866
..	..	..	..	..	..	..	..	1867
..	..	..	..	..	..	..	..	1868
..	..	..	..	..	..	..	..	1869
..	..	..	..	..	..	..	..	1870
..	..	..	..	..	..	..	..	1871
..	..	..	..	..	..	..	..	1872
..	..	..	..	..	..	..	..	1873
..	..	..	..	..	..	..	..	1874
..	..	..	..	..	..	..	..	1875
..	..	..	..	..	..	..	..	1876
..	..	..	..	..	..	..	..	1877
..	..	..	..	..	..	..	..	1878
..	..	..	..	..	..	..	..	1879
..	..	..	..	..	..	..	..	1880
..	..	..	..	..	..	..	..	1881
..	..	..	..	..	..	..	..	1882
..	..	..	..	..	..	..	..	1883
..	..	..	..	..	..	..	..	1884
..	..	..	..	..	..	..	..	1885
..	..	..	..	..	..	..	..	1886
..	..	..	..	..	..	..		1887
..	..	..	..	..	..	..	..	1888
..	..	..	..	..	..	..	..	1889
3,000	..	..	..	..	3,000	..	..	1890
..	..	10,000	..	..	10,000	..	..	1891
..	..	10,000	..	..	10,000	4,437	4,437	1892
..	..	..	..	..	..	4,500	4,500	1893
..	..	12,000	..	..	12,000	..	..	1894
..	20,200	12,550	..	..	32,750	..	..	1895
..	15,300	8,000	..	..	23,300	..	..	1896
..	6,200	4,050	..	..	10,250	..	..	1897
..	3,140	3,505	..	..	6,645	..	..	1898
..	6,500	2,500	..	..	9,000	..	..	1899
1,000	4,000	2,500	..	..	7,500	900	900	1900
2,000	2,100	1,750	100	1,450	7,400	6,000	6,000	1901
1,800	2,000	1,100	100	2,000	7,000	5,000	5,000	1902
1,150	1,350	3,100	..	1,700	7,300	7,000	7,000	1903
2,000	1,000	250	..	300	3,550	10,575	10,575	1904
500	1,000	1,000	..	500	3,000	5,255	5,255	1905
1,200	1,000	400	..	400	3,000	18,110	18,110	1906
1,000	1,250	450	..	300	3,000	40,500	40,500	1907
600	1,440	250	..	210	2,500	15,200	15,200	1908
200	1,255	400	..	145	2,000	23,116	23,116	1909
†	†	†	†	3,000	3,000	21,200	21,200	1910
†	†	†	†	†	3,000	24,393	24,393	1911
†	†	†	†	†	3,000	40,016	40,016	1912
£14,450	£67,735	£73,805	£200	£10,005	£172,195	£226,202	£226,202	

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* Includes Sapphires, Corundum, and Zircons.

† Fields not stated.

Queensland Mineral Index. Statistical Table.

Also shows the Percentage Value of EACH YEAR'S Mineral Production compared to MINERAL'S Total Production compared to the

Year.	Gold.	Silver (and Ore).	Tin (and Ore).	Copper (and Ore).	Coal.	Antimony (Ore).	Bismuth (and Ore).	Ironstone.	Lead (and Ore).
	£	£	£	£	£	£	£	£	£
1860	No official returns of gold prior to 1877, but see gold yields, according to Customs Returns, under "Rockhampton," in heading Index.	..	..	50	9,244	..	..	..	..
1861		..	..	1,450	9,922	..	..	..	..
1862		..	..	10,332	19,253	..	..	..	..
1863		..	..	30,000	15,000	..	..	..	..
1864		..	..	60,000	15,500	..	..	..	..
1865		..	..	58,440	19,425	..	..	GRAPHITE included in Years 1905 to 1910. *See* Note below.	..
1866		..	..	91,872	21,249	..	..		..
1867		..	..	84,200	9,566	..	..		..
1868		..	..	73,020	11,519	..	..		..
1869		..	..	76,230	5,907	..	..		..
1870		..	..	80,795	12,311	..	..		..
1871		..	..	174,300	9,407	..	..		..
1872		..	109,816	196,000	16,120	..	..		..
1873		..	606,184	185,808	22,052	157	..		..
1874		60	358,550	164,040	19,700	2,141	..		..
1875		..	237,879	121,980	14,835	360	..		..
1876		..	187,201	147,000	26,470	216	..		..
1877	*7,727,058	..	133,432	167,337	25,659	606	..		..
1878	1,149,240	..	88,366	35,126	21,272	405	..		..
1879	1,034,215	285	142,891	34,791	22,759	40	..		..
1880	944,869	3,610	180,977	20,137	24,573	..	..		..
1881	957,570	15,440	210,546	19,637	29,033	3,665	..		..
1882	785,868	6,762	281,244	14,982	33,592	4,447	..		..
1883	736,811	66,192	187,292	21,080	52,894	6,550	..		..
1884	1,062,471	35,327	130,460	30,872	60,025	6,469	..		..
1885	1,062,514	64,759	151,871	18,920	87,228	300	..		..
1886	1,187,189	52,797	162,124	7,000	95,243	400	..		..
1887	1,481,990	80,092	217,389	7,600	97,460	..	..		..
1888	1,690,477	44,015	200,019	9,248	127,947	..	..		..
1889	2,695,629	61,500	156,406	12,000	121,118	215	8,780		..
1890	2,182,563	56,639	154,963	3,000	157,077	4,816	1,481		..
1891	2,030,312	21,879	116,387	865	128,198	3,625	11,070		..
1892	2,164,391	36,436	123,098	2,461	123,308	278	16,000		..
1893	2,167,794	42,408	106,953	3,822	125,340	288	10,676		..
1894	2,330,282	22,077	102,277	9,582	114,593	280	6,270		4,370
1895	2,150,561	30,042	68,133	13,097	132,530	..	3,258	..	3,634
1896	2,132,980	32,162	49,018	21,042	154,987	..	..	..	6,180
1897	2,552,668	25,118	37,509	12,645	139,889	..	134	..	4,117
1898	2,750,348	10,585	36,502	2,166	150,493	..	660	..	2,480
1899	2,838,440	15,671	77,302	9,498	175,715	200	494	..	730
1900	2,871,579	12,712	74,041	23,040	173,705	..	1,865	..	3,359
1901	2,541,764	62,241	93,723	194,227	189,877	..	3,684	215	6,993
1902	2,720,512	70,145	116,171	189,200	172,286	..	123	..	2,706
1903	2,839,801	65,538	243,149	285,122	164,798	..	2,523	3,852	43,639
1904	2,714,939	71,858	270,276	257,896	166,536	..	3,581	1,663	24,560
1905	2,517,289	69,576	297,454	503,547	155,476	174	5,368	3,872§	33,212
1906	2,313,465	101,693	490,283	916,546	173,282	6,917	1,882	14,314§	49,884
1907	1,978,940	112,540	496,766	1,028,179	222,135	7,863	1,806	24,527§	75,330
1908	1,975,554	117,889	342,191	882,901	244,922	469	10,595	51,227§	95,239
1909	1,935,167	99,093	244,927	853,196	270,726	..	2,771	48,221§	68,543
1910	1,874,946	92,685	243,271	932,489	322,822	..	9,708	35,429§	30,401
1911	1,640,319	56,305	307,847	1,151,351	323,998	72	5,525	11,157	23,460
1912	1,477,979	66,188	364,503	1,698,280	338,264	..	2,835	9,035	55,667
Total value £	75,218,494	1,722,319	8,199,391	10,948,399	5,377,240	50,953	111,089	203,512	534,504
Total %	72·31 %	1·65 %	7·88 %	10·52 %	5·17 %	·05 %	·17 %	·19 %	·51 %

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* Total value to end of 1877. † Returns exclusive of gold.

‡ SCHEELITE.—Value of Yield in 1904, £75; 1905, £330; 1906, £347; 1907, £320; 1908, £20; 1909, Nil;

State ANNUAL VALUE SUMMARY to end of 1912. PLATE 45.

the Value of ALL OTHER YEARS, together with the Percentage Value of EACH
Total Production of ALL OTHER MINERALS.

Limestone.	Fireclay.	Manganese (Ore).	Molybdenite.	Wolfram.	Opals.	Sapphire, &c.	Total.	Value Percentage of Whole Production	Year.
£	£	£	£	£	£	£	£		
..	..	..	..	SCHEELITE included in Years 1904 to 1910. *See* Note at bottom of Table.	..	..	9,294	..	**1860**
..	..	..	..		..	..	11,372	·01 †	**1861**
..	..	..	..		..	..	29,585	·02 †	**1862**
..	..	..	..		..	..	45,000	·04 †	**1863**
..	..	..	..		..	..	75,500	·07 †	**1864**
..	..	..	..		..	..	77,865	·07 †	**1865**
..	..	..	..		..	..	113,121	·10 †	**1866**
..	..	..	..		..	..	93,766	·09 †	**1867**
..	..	..	..		..	..	84,539	·08 †	**1868**
..	..	..	..		..	..	82,137	·08 †	**1869**
..	..	..	..		..	..	93,106	·08 †	**1870**
..	..	..	..		..	..	183,707	·17 †	**1871**
..	..	..	..		..	..	321,936	·30 †	**1872**
..	..	..	..		..	..	814,201	·78 †	**1873**
..	..	..	..		..	..	544,491	·52 †	**1874**
..	..	..	..		..	..	375,054	·36 †	**1875**
..	..	..	..		..	..	360,887	·34 †	**1876**
..	..	..	..		..	..	8,054,092	7·74 **	**1877**
..	..	..	..		..	..	1,294,409	1·24	**1878**
..	..	..	..		..	..	1,234,981	1·19	**1879**
..	..	..	..		..	..	1,174,166	1·13	**1880**
..	..	..	..		..	..	1,235,891	1·19	**1881**
..	..	..	..		..	..	1,126,895	1·08	**1882**
..	..	..	..		..	..	1,070,819	1·03	**1883**
..	..	..	..		..	..	1,325,624	1·27	**1884**
..	..	..	..		..	..	1,385,592	1·33	**1885**
..	..	..	..		..	..	1,504,753	1·44	**1886**
..	..	..	..		..	..	1,884,531	1·81	**1887**
..	..	..	..		..	..	2,071,706	1·99	**1888**
..	..	..	..		..	..	3,055,648	2·93	**1889**
..	..	..	..		3,000	..	2,563,539	2·46	**1890**
..	..	..	..		10,000	..	2,322,336	2·23	**1891**
..	..	..	..		10,000	4,437	2,480,409	2·38	**1892**
..	..	..	..		..	4,500	2,461,781	2·36	**1893**
..	..	400	..	710	12,000	..	2,602,841	2·50	**1894**
..	..	983	..	662	32,750	..	2,435,650	2·34	**1895**
..	..	900	..	60	23,300	..	2,420,629	2·32	**1896**
..	..	1,506	..	195	10,250	..	2,784,031	2·67	**1897**
33	..	251	..	2,540	6,645	..	2,962,703	2·85	**1898**
..	..	2,831	..	10,060	9,000	..	3,139,941	3·01	**1899**
3,862	..	205	561	6,605	7,500	900	3,179,934	3·05	**1900**
4,901	..	795	1,609	1,145	7,400	6,000	3,114,574	2·99	**1901**
3,672	..	16,989	5,502	1,167	7,000	5,000	3,310,473	3·18	**1902**
8,060	..	5,332	2,100	7,870	7,300	7,000	3,686,084	3·54	**1903**
10,816	..	3,540	2,746	161,710‡	3,550	10,575	3,704,246	3·56	**1904**
15,863	..	5,925	10,454	100,203‡	3,000	5,255	3,726,668	3·58	**1905**
23,364	..	4,391	17,034	64,483‡	3,000	18,110	4,198,648	4·03	**1906**
35,808	560	4,464	9,660	90,087‡	3,000	40,500	4,132,165	3·97	**1907**
51,706	1,052	5,524	14,686	32,812‡	2,500	15,200	3,844,487	3·69	**1908**
35,135	1,366	2,124	13,820	56,348‡	2,000	23,116	3,656,553	3·51	**1909**
34,144	1,675	3,127	16,914	88,402‡	3,000	21,200	3,710,213	3·56	**1910**
27,887	2,325	4,021	24,842	54,163	3,000	24,393	3,661,059	3·52	**1911**
24,176	2,535	1,281	33,775	57,821	3,000	40,016	4,175,355	4·01	**1912**
279,427	9,533	64,589	153,703	737,437	172,195	226,202	104,008,987	—	Total value £
·27 %	—	·06 %	·14 %	·70 %	·16 %	·21 %	= 100·00%	% 100·00	Total %

** Total yield of all gold to end of 1877.

1910, £286. [§ GRAPHITE.—Value of Yield in 1905, £272; 1906, £200; 1907, £200; and 1908, £60.

SUBSIDIARY FIELDS AND MINING CENTRES.

(*Principal Field Names on Opposite Page.*)

First column of numbers refer to District Maps; second column to Fields shown on District Maps. Yields (if any) are included in the groups (Districts or Fields) mentioned in Table 46-46A, opposite. For locality descriptions, *see* under names in Text :—

Plate No.	Field No.	Field, Centre, or Area.	Mineral.	Statistical Group Name.	Plate No.	Field No.	Field, Centre, or Area.	Mineral.	Statistical Group Name.
20	50	Agate Downs	Gold ..	Other Goldfields	10	118A	Mammoth ..	Coal ..	Rockhampton
16	51	Allandale ..	Gold ..	Charters Towers	4	119	Marodian ..	Gold ..	Other Goldfields
14	52	Alligator Cr...	Gold ..	Other Goldfields	8	120	Mareeba &c.	Gold ..	Other Goldfields
8	14	Annan River	Tin ..	Cooktown	16	121	Marengo ..	Gold ..	Other Goldfields
16	..	Balcooma ..	Gold ..	Other Goldfields	2	122	Maxwelton ..	Gold ..	Other Goldfields
2	54	Barmundoo ..	Gold ..	Other Goldfields	2	123	Milton ..	Gold ..	Other Goldfields
8	165	Bartle Frere..	Gold ..	Other Goldfields	4	91	Molangool ..	Gold ..	Other Goldfields
9	..	Batavia R. ..	Gold ..	Other Goldfields	2	125	Monal Creek..	Gold ..	Rockhampton
6	55A	Beaudesert ..	Coal ..	Ipswich	2	126	Morinish ..	Gold ..	Rockhampton
10	55B	Bee Creek ..	Coal ..	Mackay	4	128	Mt. Bopple ..	Gr'phite	Maryborough
4	56	Black Snake..	Gold ..	Other Goldfields	10	144	Mt. Britton ..	Gold ..	Other Goldfields
10	11	Blair Athol ..	Coal ..	Clermont	2	129	Mt. Cannindah	Copper	Gladstone
8	14	Bloomfield R.	Tin ..	Cooktown	8	130	Mt. Carbine ..	Wolf'm	Herberton
12	58	Blair	Gold ..	Other Goldfields	10	131	Mt. Flora ..	Copper	Mackay
10	59	Bluff	Coal ..	Rockhampton	8	132	Mt. Hogan ..	Gold ..	Etheridge
2	60	Bompa ..	Gold ..	Other Goldfields	2	133	Mt. Larcombe	Gold ..	Gladstone
4	61	Boolboonda ..	Gold ..	Other Goldfields	8	25	Mt. Mulligan	Coal ..	
14	62	Bowen River	Coal ..	Mackay	2	135	Mt. Rainbow	Gold ..	Other Goldfields
8	38	Bowden, &c.	Wolf'm	Pascoe River	4	136	Mt. Shamrock	Gold ..	Biggenden
20	63	Bower Bird ..	Gold ..	Other Goldfields	14	137	Mt. Spencer ..	Copper	Mackay
4	64	Brovinia ..	Gold ..	Other Goldfields	8	40	Mt. Spurgeon	Tin ..	Port Douglas
18	65	Bull's Creek..	Opal ..	Eromanga	4	139	Mt. Steadman	Gold ..	Other Goldfields
6	65A	Bundamba ..	Coal ..	Ipswich	14	140	Mt. Wyatt ..	Gold ..	Other Goldfields
4	66	Burrum ..	Coal ..	Wide Bay	8	141	Mulgrave ..	Gold ..	Other Goldfields
2	67	Callide Creek	Coal ..	Gladstone	6	142	Nanango ..	Gold ..	Other Goldfields
2	68	Calliope-Boyne	Gold ..	Other Goldfields	4	143	Neardie ..	An'm'y	Gympie
12	69	Canal Creek ..	Gold ..	Rockhampton	10	144	Nebo &c. ..	Gold ..	Other Goldfields
4	70	Cania-Kr'mbit	Gold ..	Other Goldfields	16	145	Newhaven ..	Gold ..	Other Goldfields
8	35	Cannibal Creek	Tin ..	Palmer	8	146	Noble Island	Wolf'm	Cooktown
2	72	Canoona ..	Gold ..	Rochkampton	14	147	Normanby ..	Gold ..	Other Goldfields
16	73	Cape River ..	Gold ..	Charters Towers	6	147A	North Ipswich	Coal ..	Ipswich
16	74	Carrington ..	Gold ..	Charters Towers	6	6	Nundah, &c...	Coal ..	Brisbane
2	75	Cawarral ..	Gold ..	Rockhampton	8	151	Oaks	Gold ..	Etheridge
4	76	Chowey ..	Gold ..	Other Goldfields	16	152	Ollera Creek..	Wolf'm	Star River
12	77	Chinchilla ..	Coal ..	Ipswich	12	153	Palgrave ..	Gold ..	Other Goldfields
12	77A	Clifton ..	Coal ..	Ipswich	10	154	Peak Downs	Copper	Clermont
8	120	Clohesy, &c.	Gold ..	Other Goldfields	16	155	Piccadilly ..	Gold ..	Other Goldfields
10	78	Comet River	Coal ..	Rockhampton	12	156	Pikedale ..	Gold ..	Other Goldfields
8	79	Cooktown ..	Coal ..	Cooktown	8	26	Possession Is.	Gold ..	Horn Island
2	80	Coonyan ..	Gold ..	Rockhampton	8	158	Potallah ..	Gold ..	Other Goldfields
8	171	Cocoa Creek..	An'm'y	Cooktown	6	158A	Queensport ..	Coal ..	Brisbane
2	82	Crocodile Cr.	Gold ..	Rockhampton	4	159	Reid's Creek..	Gold ..	Other Goldfields
12	84A	Dalby ..	Coal ..	Ipswich	2	160	Ridgelands ..	Gold ..	Rockhampton
12	83	Darling Downs	Coal ..	Ipswich	4	161	Rocky River	Gold ..	Coen
10	84	Dawson-Mack.	Coal ..	Rockhampton	2	162	Rosedale ..	Wolf'm	Bundaberg
2	84A	Dee River ..	Gold ..	Mount Morgan	2	163	Rosewood ..	Gold ..	Rockhampton
20	85	Duchess ..	Gold ..	Cloncurry	6	164	Rosewood ..	Coal ..	Ipswich
18	37	Duck Creek ..	Opal ..	Paroo	16	29	Running Creek	Tin ..	Kangaroo Hills
2	87	Eastern Boyne	Gold ..	Other Goldfields	8	165	Russell River	Gold ..	Other Goldfields
6	88	Enoggera ..	Gold ..	Other Goldfields	2	68	Seven-mile, &c.	Gold ..	Other Goldfields
14	89	Eungella ..	Gold ..	Other Goldfields	18	37	Sheep St'n Cr.	Opal ..	Paroo
2	90	Figtree ..	Gold ..	Other Goldfields	10	166	Springs, &c...	Gold ..	Clermont
4	91	Gaeta ..	Gold ..	Other Goldfields	20	15	Stanhills, &c.	Tin ..	Croydon
2	32	Gavial Cr., &c.	Gold ..	Mount Morgan	4	169	Stanton-H'rc't	Gold ..	Other Goldfields
4	93	Gebangle ..	Gold ..	Other Goldfields	2	170	Stanwell ..	Gold ..	Rockhampton
8	94	Gilberton ..	Gold ..	Etheridge	8	171	Starcke, &c...	Gold ..	Other Goldfields
4	95	Glastonbury..	Gold ..	Gympie	16	172	Strathalbyn ..	Gold ..	Other Goldfields
2	96	Glassford Cr.	Copper	Gladstone	4	173	St. John's Cr.	Gold ..	Eidsvold
4	108	Gold Top, &c.	Gold ..	Gympie	2	174	Styx River ..	Coal ..	Rockhampton
8	35	Granite, &c...	Tin ..	Palmer	12	175	Talgai ..	Gold ..	Other Goldfields
14	99	Grass Tree ..	Gold ..	Other Goldfields	12	176	Tannymorel	Coal ..	Ipswich
8	100	Green Hills ..	Gold ..	Etheridge	2	177	Targinnie ..	Gold ..	Other Goldfields
8	101	Hayes Creek..	Gold ..	Cooktown	8	178	Tate	Gold ..	Other Goldfields
20	34	Horse Creek..	Opal ..	Opalton	4	179	Tenningering	Gold ..	Other Goldfields
16	103	Homestead ..	Gold ..	Charters Towers	12	180	Thane's Creek	Gold ..	Other Goldfields.
4	104	Hungry Hill	An'm'y	Eidsvold	4	128	Tiaro, &c. ..	Coal ..	Maryborough
10	105	Jellinbah ..	Coal ..	Rockhampton	6	180B	Tingalpa ..	Coal ..	Brisbane
8	106	Jordan Creek	Gold ..	Other Goldfields	10	180C	Tolmies ..	Coal ..	Rockhampton
18	107	Jundah, &c...	Opal ..	Opalton	12	83	Toowoomba..	Coal ..	Ipswich
4	108	Kilkivan, &c.	Gold ..	Gypmie	8	165	Towalla, &c.	Gold ..	Russell Ex. G.
18	16	Koroit ..	Opal ..	Cunnamulla	2	182	Ulam ..	Gold ..	Rockhampton
20	110	Kynuna ..	Opal ..	Windsor	2	183	Uncle Sam ..	Gold ..	Other Goldfields
2	111	Langmorn ..	Gold ..	Other Goldfields	6	183A	Walloon ..	Coal ..	Ipswich
20	8	Lawn Hills ..	Pb. Ag.	Burketown	2	183B	Waterpark Cr.	Coal ..	Rockhampton
12	113	Leyburn ..	Gold ..	Other Goldfields	16	185	Windsor ..	Gold ..	Other Goldfields
20	114	Leichhardt ..	Gold ..	Other Goldfields	8	184	Wolfram Camp	Wolf'm	Hodgkinson
8	114A	Little River ..	Coal ..	Cooktown	20	186	Woolgar ..	Gold ..	Etheridge
8	115	Lochinvar ..	Gold ..	Other Goldfields	4	187	Yabba ..	Gold ..	Other Goldfields
16	116	Lucky Downs	Gold ..	Other Goldfields	10	188	Yatton ..	Gold ..	Other Goldfields
12	117	Lucky Valley	Gold ..	Other Goldfields	4	189	Yorkey ..	Gold ..	Other Goldfields
12	118	Macdonald ..	Gold ..	Other Goldfields	18	190	Yowah ..	Opal ..	Cunnamulla

Queensland Mineral Index. Statistical Table. DISTRICT MINERAL SUMMARY in VALUES, QUANTITIES, and PERCENTAGES to end of 1912. Showing the TOTAL Production of (1) Each Mineral in Each District; (2) of All Minerals in Each District; and (3) of Each Mineral in the STATE as a Whole.

PLATE 46-46a.

Plate No.	Field No.	DISTRICT AND FIELD.	GOLD.			COPPER.			SILVER.			ANTIMONY.			COAL.		
		See Subsidiary Fields on Opposite Page.	PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.
			Fine oz.	%	£	Tons.	%	£	Oz.	%	£	Tons.	%	£	Tons.	%	£
8	1	Alice River	..	..	..	..	..	..	51	..	5	..	..	..	..	..	..
10	2	Anakie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	3	Balcooma and Lucky	..	..	..	..	..	..	228	..	12	..	..	..	..	..	..
4	4	Biggenden	..	..	..	9	..	694	3,967	0·03	414	..	..	..	..	..	..
16	5	Bowen	..	..	..	16·75	..	1,091	181,545	1·34	22,635	..	..	..	..	..	..
6	6	Brisbane	..	..	..	..	..	..	..	..	..	..	..	..	1,803	0·02	466
14	7	Bundaberg	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	8	Burketown	..	..	..	93	0·04	4,520	19,400	0·14	2,159	..	..	..	..	..	..
16	9	**Charters Towers**	6,359,225	35·92	27,012,253	957·75	0·48	60,844	870,154	6·45	95,012	2	0·05	35	..	..	..
8	10	Chillagoe	..	*	..	5,796	*	344,197	1,179,561	*	123,530	..	..	..	..	..	..
10	11	Clermont	‡	..	..	47,012·75	23·97	1,619,705	1,173	..	124	..	..	..	299,095	2·12	169,971
20	12	Cloncurry	‡	..	..	32,303	16·47	1,873,666	76,458	0·56	8,483	..	..	..	..	..	..
8	13	Coen and Rocky	50,242	0·28	213,413	..	..	..	7,877	0·06	821	..	..	..	..	..	..
8	14	Cooktown	..	..	..	1	..	61	349	..	37	205	4·90	2,510	..	..	..
20	15	Croydon	744,703	4·21	3,163,297	1	..	59	89,179	0·66	9,482	..	..	..	..	..	..
18	16	Cunnamulla	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	17	Eidsvold	97,626	0·55	414,688	5	..	120	1,384	0·01	154	58	1·15	464	..	..	..
18	18	Eromanga	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	19	Etheridge	569,248	3·22	2,418,010	4,429·75	2·26	278,531	171,882	1·27	18,666	..	..	..	..	..	..
4	..	Gayndah	..	..	..	..	..	..	7,160	0·05	1,350	..	..	..	..	..	..
2	..	Gladstone	‡	..	..	5,601·50	2·86	381,436	51,227	0·38	6,096	..	..	..	70	..	70
4	22	**Gympie**	2,653,293	14·98	11,270,466	429	0·22	30,975	68,973	0·51	7,357	1,036·50	24·78	12,033	..	..	..
8	23	Hamilton	43,945	0·25	186,667	..	..	..	5,380	0·04	563	..	..	..	..	..	..
16	24	Herberton*	..	..	..	28,912	*17·68	1,918,483	6,020,349	*53·34	803,167	114	*2·73	1,436	..	..	..
8	25	Hodgkinson §	234,298	1·33	995,234	9	..	701	86,271	0·64	9,250	2,697	64·50	33,294	..	..	..
8	26	Horn Island	‡	..	..	..	..	..	204	..	20	..	..	..	..	..	..
20	27	Hughenden (Mount Emu)	..	..	..	..	..	..	178	..	20	..	..	..	..	..	..
6	28	Ipswich	..	..	..	..	..	..	..	..	..	..	..	..	11,558,657	81·66	4,135,428
16	29	Kangaroo Hills	..	..	..	152	0·07	11,194	44,459	0·33	5,106	2	0·29	29	..	..	..
14	..	Mackay	‡	..	..	521·75	0·26	35,944	14,011	0·10	1,523	..	..	..	..	..	..
4	..	Maryborough	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	32	Mount Morgan	Included in	Rockhampton.		39,411·50	20·09	2,596,539	82,873	0·61	8,840	..	..	..	..	..	..
4	33	Mount Perry	Included in	Tenningering.		21,170·25	10·79	1,219,603	703,858	5·22	78,846	..	..	..	..	..	..
20	34	Opalton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	“Other Goldfields”	782,704	4·42	3,324,711	..	..	..	..	..	..	..	..	..	..	..	..
..	..	Other Sources	..	..	..	465·25	0·24	25,688	78,420	0·58	9,208	9·50	0·21	72	..	..	..
8	35	Palmer	1,327,016	7·43	5,636,802	..	..	..	74	..	8	..	..	..	..	..	..
4	36	Paradise	‡	..	..	..	..	..	1,059	..	114	..	..	..	..	..	..
18	37	Paroo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	38	Pascoe River	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	39	Perry	‡	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	40	Port Douglas	..	..	..	189	0·10	2,273	..	..	..	..	..	..	..	..	..
16	41	Ravenswood	822,275	4·65	3,492,799	132	0·7	8,189	1,008,155	7·47	190,274	57	1·37	1,080	..	..	..
2	42	**Rockhampton**	4,023,364	22·72	17,090,154	7,200	3·67	452,730	153,332	1·14	16,168	..	..	..	97,042	0·68	53,841
14	43	Sellheim	..	..	..	..	..	..	506,679	3·76	68,513	..	..	..	..	..	..
2	44	St. Lawrence	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	45	Stanthorpe	..	..	..	1,144·75	0·58	70,318	2,061,345	15·27	234,361	..	..	..	..	..	..
16	46	Star River	..	..	..	200	0·10	10,838	..	..	..	..	..	..	..	..	..
12	..	Warwick	‡	..	..	..	..	..	10	..	1	..	..	..	..	..	..
4	..	Wide Bay	..	..	..	..	..	..	..	..	..	..	..	..	2,197,382	15·52	1,017,464
20	49	Windsor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
—	—	Totals	17,707,939	100·00	£75,218,494 72·30%	196,163	100·00	£10,948,399 10·53%	13,497,125	100·00	£1,722,319 1·65%	4,181	100·00	50,953 0·05%	14,154,049	100·00	£5,377,240 5·17%

DISTRICT AND FIELD.	OPAL.		SAPPHIRE.		BISMUTH.			WOLFRAM.			MANGANESE.			LEAD.			MOLYBDENITE.		
	VALUE.		VALUE.		PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.
	£	%	£	%	Tons.	%	£	Tons.	%	£	Tons.	%	£	Tons.	%	£	Tons.	%	£
Alice River	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anakie	..	..	226,202	100·00	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Balcooma and Lucky	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Biggenden	..	..	..	..	411·80	59·13	65,577	..	..	..	..	..	..	..	..	..	..	..	..
Bowen	..	..	..	..	1	0·15	70	1·25	0·02	124	..	..	..	177·50	0·45	1,949	..	..	..
Brisbane	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bundaberg	..	..	..	..	..	..	..	5·50	0·07	418	..	..	..	..	..	..	..	..	..
Burketown	..	..	..	..	..	..	..	..	..	..	..	..	..	478·50	1·23	5,898	..	..	..
Charters Towers	..	..	..	..	..	..	..	·40	..	25	..	..	..	3,359·25	8·60	49,097	..	..	..
Chillagoe	..	..	..	..	18·60	*	5,792	1,242	*	120,545	..	..	..	8,488	*	119,702	755·50	*	80,843
Clermont	..	..	..	..	..	..	..	7·75	0·09	691	..	..	..	..	..	..	..	..	..
Cloncurry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coen and Rocky	..	..	..	..	..	..	..	27	0·32	1,993	..	..	..	..	..	..	..	..	..
Cooktown	..	..	..	..	..	..	..	27·25	0·33	2,297	..	..	..	..	..	..	..	..	..
Croydon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cunnamulla	14,450	8·38	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eidsvold	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eromanga	10,005	5·81	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Etheridge	..	..	..	..	1·50	0·21	466	24·65	0·30	3,201	..	..	..	1,343·50	3·44	20,398	..	..	..
Gayndah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gladstone	..	..	..	..	..	..	..	·25	..	27	16,663	97·99	63,343	8·25	0·02	119	..	..	..
Gympie	..	..	..	..	..	..	..	..	..	..	187	1·09	706	1	..	15	..	..	..
Hamilton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Herberton*	..	..	..	..	10·45	*4·17	2,329	3,698	*59·16	338,269	..	..	..	23,381·50	*81·52	312,478	89·90	*59·75	10,575
Hodgkinson §	..	..	..	..	47	6·75	12,698	2,912	34·88	231,128	..	..	..	261	0·67	3,488	563·50	39·83	61,570
Horn Island	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hughenden (Mount Emu)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ipswich	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kangaroo Hills	..	..	..	..	·05	..	23	118	1·41	10,226	..	..	..	10	0·02	119	..	..	..
Mackay	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	21	..	..	..
Maryborough	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Morgan	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	13	..	..	..
Mount Perry	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	26	..	..	..
Opalton	67,735	39·33	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
“Other Goldfields”	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Sources	6,000	3·48	..	..	..	..	..	..	..	..	..	..	..	339	0·87	4,592	..	..	..
Palmer	..	..	..	..	..	..	..	·20	..	21	..	..	..	..	..	..	..	..	..
Paradise	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Paroo	73,805	42·86	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pascoe River	..	..	..	..	..	..	..	42·25	0·50	3,480	..	..	..	..	..	..	..	..	..
Perry	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Port Douglas	..	..	..	..	..	..	..	8	0·09	230	..	..	..	..	..	..	..	..	..
Ravenswood	..	..	..	..	1·65	0·23	539	..	..	..	..	..	..	193·25	0·49	2,643	·65	0·05	83
Rockhampton	..	..	..	..	..	..	..	..	..	..	154	0·91	540	2	..	20	..	..	..
Sellheim	..	..	..	..	202	29·00	22,793	..	..	..	..	..	..	..	..	..	..	..	..
St. Lawrence	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Stanthorpe	..	..	..	..	..	..	..	2	0·03	188	..	..	..	1,044·75	2·65	13,926	..	..	4
Star River	..	..	..	..	2·40	0·34	802	233·75	2·79	22,802	..	..	..	..	..	..	5·10	0·36	628
Warwick	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wide Bay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Windsor	200	0·12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	172,195 0·17%	100·00	226,202 0·22%	100·00	696·45	100·00	£111,089 0·10%	8,350·25	100·00	£735,665 0·70%	17,004	100·00	£64,589 0·06%	39,092·50	100·00	£534,504 0·52%	1,414·65	100·00	153,703 0·14%

DISTRICT AND FIELD.	LIMESTONE.			IRONSTONE.			TIN ORE.			SCHEELITE.			GRAPHITE.			FIRECLAY.			Totals.		DISTRICT AND FIELD.
	PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.	PRODUCT.		VALUE.	VALUE.†	VALUE.	
	Tons.	%	£	Tons.	%	£	Tons.	%	£	Tons.	%	£	Tons.	%	£	Tons.	%	£	%	£	
Alice River	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	Alice River.
Anakie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·22	226,202	Anakie.
Balcooma and Lucky	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	Balcooma and Lucky.
Biggenden	215	0·03	247	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·06	66,932	Biggenden.
Bowen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·02	25,869	Bowen.
Brisbane	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	466	Brisbane.
Bundaberg	200	0·03	100	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	518	Bundaberg.
Burketown	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·01	12,577	Burketown.
Charters Towers	14,899	1·71	15,750	..	..	..	407·75	0·30	39,479	..	..	..	..	..	..	..	..	..	26·22	27,272,495	**Charters Towers.**
Chillagoe	54,906	*	10,676	9,687	*	7,191	2,634	*	212,796	6·75	..	532	..	..	..	..	..	..	*	1,025,804	Chillagoe.*
Clermont	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1·73	1,790,491	Clermont.
Cloncurry	5,243	0·60	4,651	17,647	6·78	8,400	..	..	..	..	..	..	..	..	..	..	..	..	1·83	1,895,200	Cloncurry.
Coen and Rocky	..	..	..	..	..	..	20·50	0·02	2,622	..	..	..	..	..	..	..	..	..	0·21	218,849	Coen and Rocky.
Cooktown	..	..	..	..	..	..	9,004	6·69	578,587	..	..	..	..	..	..	..	..	..	0·56	583,492	Cooktown.
Croydon	..	..	..	..	..	..	177·75	0·14	16,555	..	..	..	..	..	..	..	..	..	3·07	3,189,393	Croydon.
Cunnamulla	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·02	14,450	Cunnamulla.
Eidsvold	33	..	58	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·40	415,484	Eidsvold.
Eromanga	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10,005	Eromanga.
Etheridge	4,219	0·14	2,485	..	..	..	356	0·27	33,492	..	..	..	..	..	..	..	..	..	2·67	2,775,249	Etheridge.
Gayndah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,350	Gayndah.
Gladstone	44,765	5·14	31,936	1,775	0·69	653	..	..	..	..	..	..	..	..	..	139	0·59	191	0·47	483,871	Gladstone.
Gympie	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10·89	11,321,552	**Gympie**
Hamilton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·18	187,230	Hamilton.
Herberton*	64,194	*13·70	35,848	31,978	*16·03	20,131	64,148	*49·62	3,954,018	2·65	*46·65	243	..	..	..	..	..	..	*8·11	7,396,977	Herberton.
Hodgkinson §	..	..	..	..	..	..	68·50	0·05	5,102	10·75	53·35	997	..	..	..	..	..	..	1·30	1,353,462	Hodgkinson.
Horn Island	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	Horn Island.
Hughenden (Mount Emu)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20	Hughenden (Mount Emu).
Ipswich	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3·98	4,135,428	Ipswich.
Kangaroo Hills	..	..	..	..	..	..	3,392·25	2·52	247,181	..	..	..	..	..	..	..	..	..	0·26	273,878	Kangaroo Hills.
Mackay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·03	37,488	Mackay.
Maryborough	..	..	..	..	..	..	..	..	..	..	..	..	148	100·00	732	..	..	..	..	732	Maryborough.
Mount Morgan	166	0·02	33	25,611	9·85	10,653	..	..	..	..	..	..	..	..	..	23,352	99·41	9,342	2·52	2,625,420	Mount Morgan.
Mount Perry	15,331	1·76	9,645	1,165	0·46	794	..	..	..	..	..	..	..	..	..	..	..	..	1·25	1,308,914	Mount Perry.
Opalton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·06	67,735	Opalton.
“Other Goldfields”	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3·20	3,324,711	Other Goldfields.
Other Sources	..	..	..	..	..	..	·15	..	24	..	..	..	..	..	..	..	..	..	0·04	45,584	Other Sources.
Palmer	..	..	..	..	..	..	3,053·75	2·27	165,223	..	..	..	..	..	..	..	..	..	5·58	5,802,054	Palmer.
Paradise	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	114	Paradise.
Paroo	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·07	73,805	Paroo.
Pascoe River	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,480	Pascoe River.
Perry	16,603	1·90	5,720	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,720	Perry.
Port Douglas	..	..	..	..	..	..	1,205	0·89	62,974	..	..	..	..	..	..	..	..	..	0·06	65,477	Port Douglas.
Ravenswood	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3·55	3,695,607	Ravenswood.
Rockhampton	629,005	72·31	150,384	171,132	65·87	154,580	..	..	..	..	..	..	..	..	..	..	..	..	17·22	17,918,417	**Rockhampton.**
Sellheim	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·09	91,306	Sellheim.
St. Lawrence	700	0·08	437	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	437	St. Lawrence
Stanthorpe	14,190	1·63	3,493	806	0·31	378	49,431·50	36·72	2,840,470	..	..	..	..	..	..	..	..	..	3·04	3,163,138	Stanthorpe.
Star River	1,647	0·19	2,480	..	..	..	693·75	0·51	40,868	..	..	..	..	..	..	..	..	..	0·06	67,580	Star River
Warwick	6,551	0·75	5,484	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·02	16,323	Warwick.
Wide Bay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0·98	1,017,464	Wide Bay.
Windsor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	200	Windsor.
Totals	869,867	100·00	£279,427 0·27%	259,801	100·00	£202,780 0·20%	134,592·75	100·00	£8,199,391 7·89%	20·15	100·00	1,772	148	100·00	£732	23,491	100·00	£9,533	100·00 100·00	£104,008,987	Totals.

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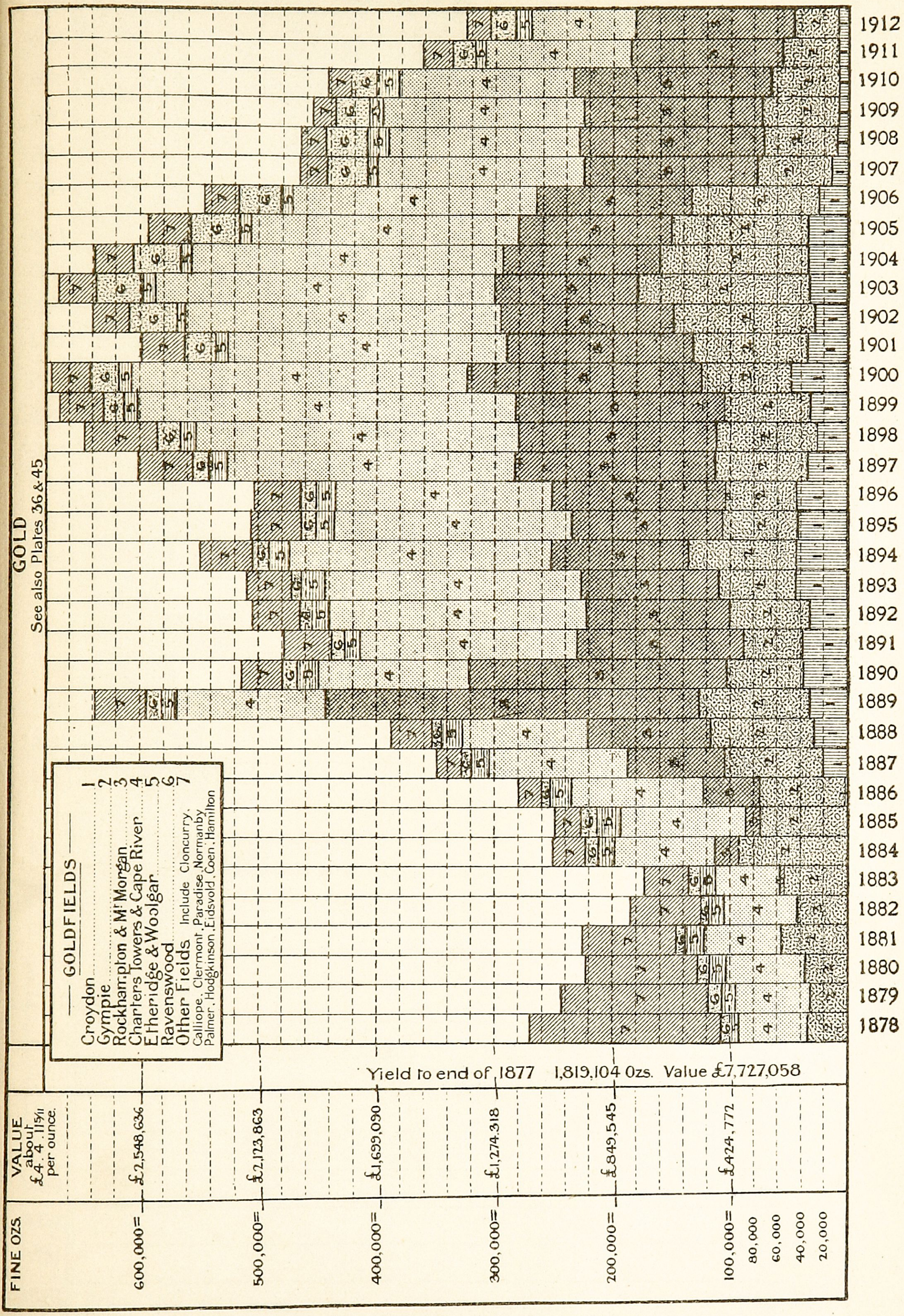
* Chillagoe Percentages are included in Herberton Returns. Returns were only separated from Herberton after 1908.

† Only percentages of total *values* can be estimated, all other columns show *quantity* percentages.

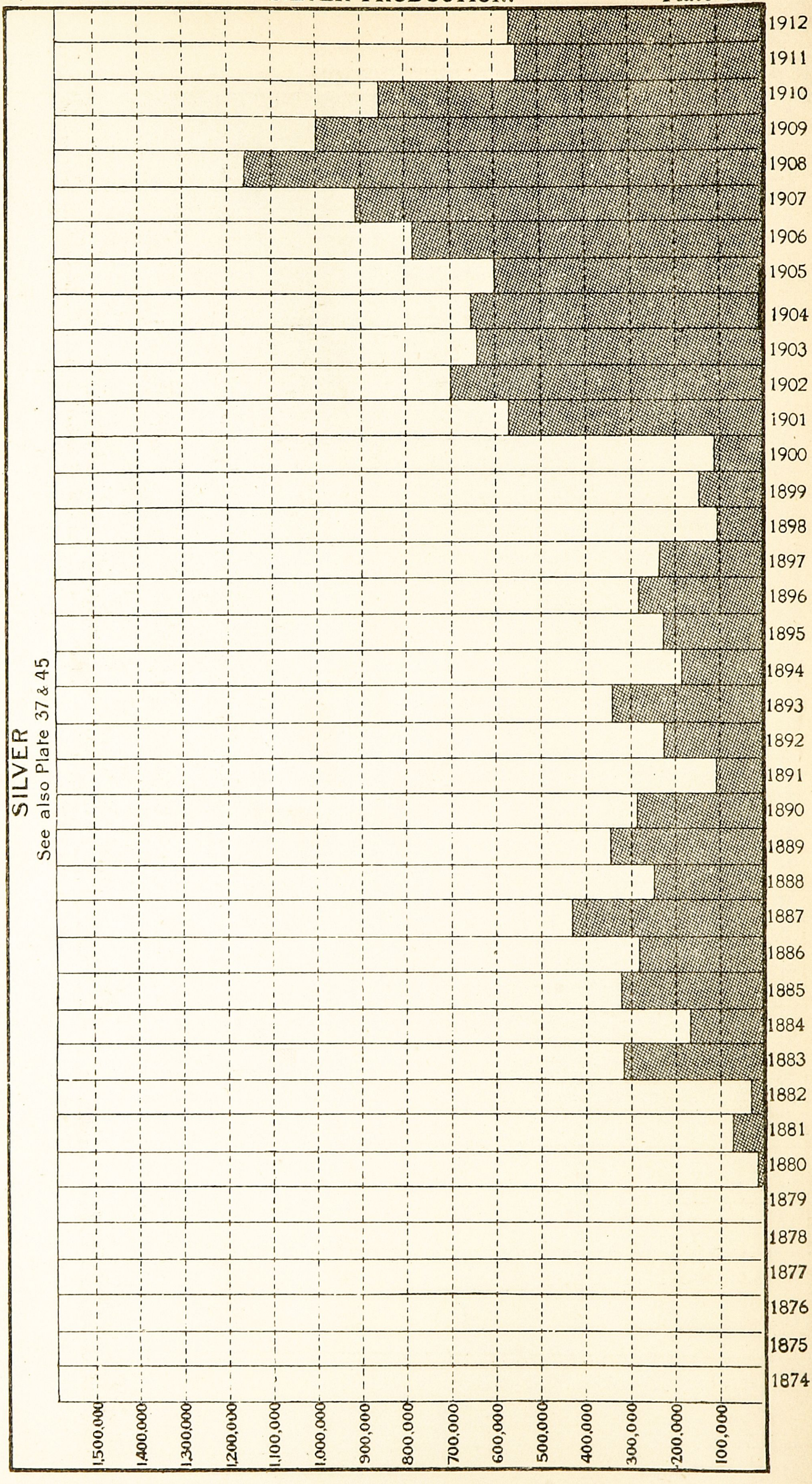
‡ Included in “Other Goldfields.”

§ Hodgkinson Returns, other than gold, are transferred to Chillagoe after year 1908.

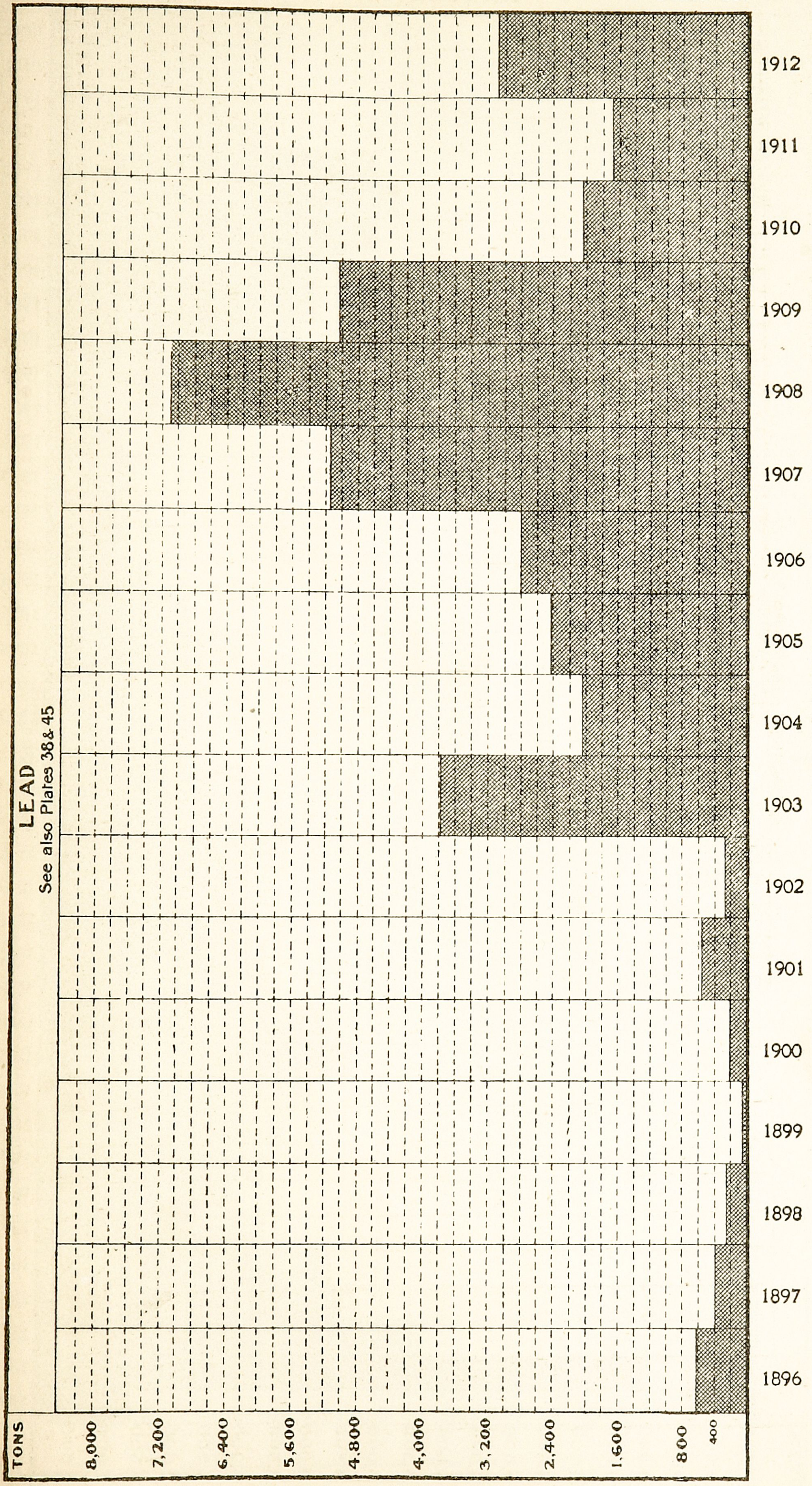
GOLD PRODUCTION.



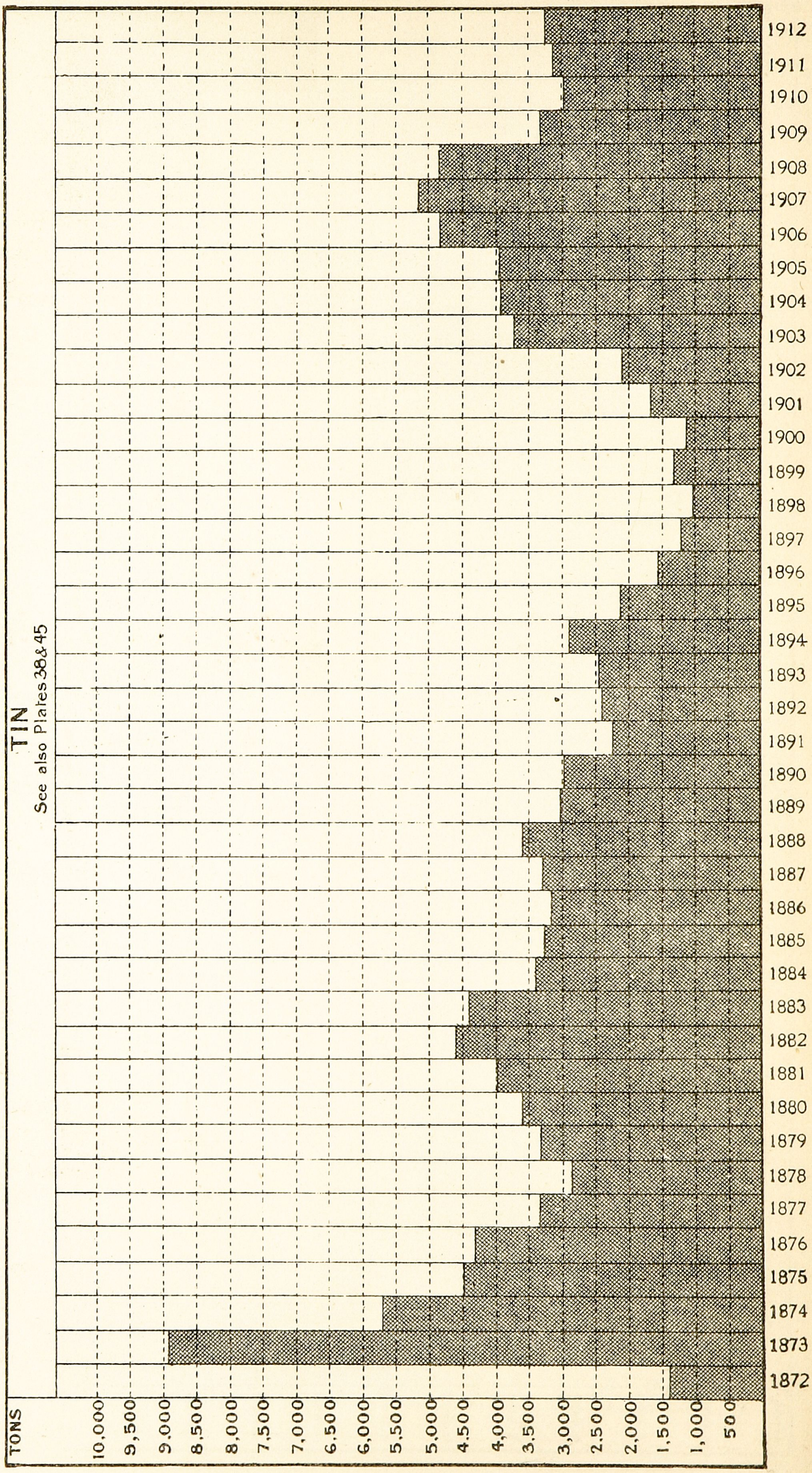
SILVER PRODUCTION.



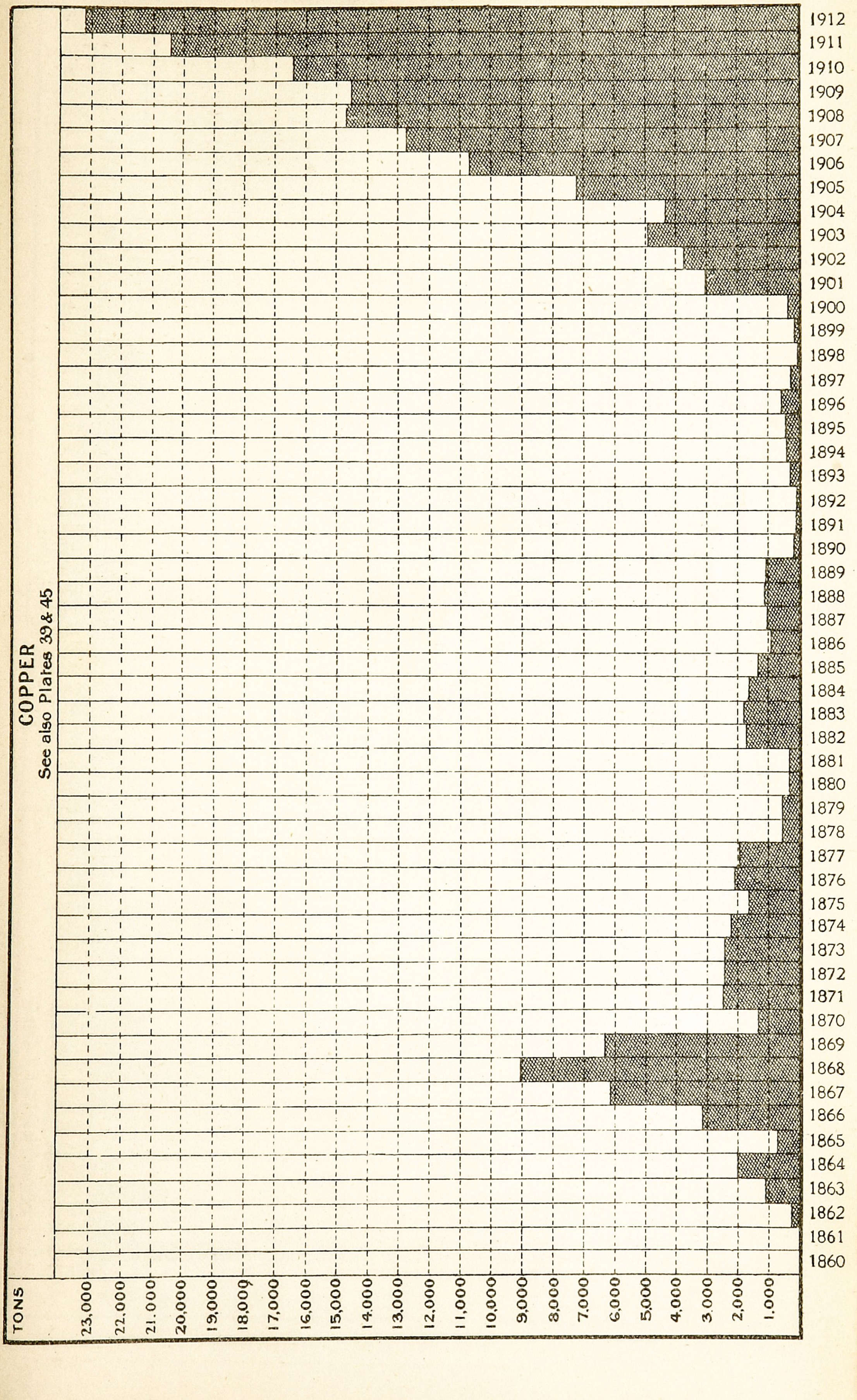
LEAD PRODUCTION.



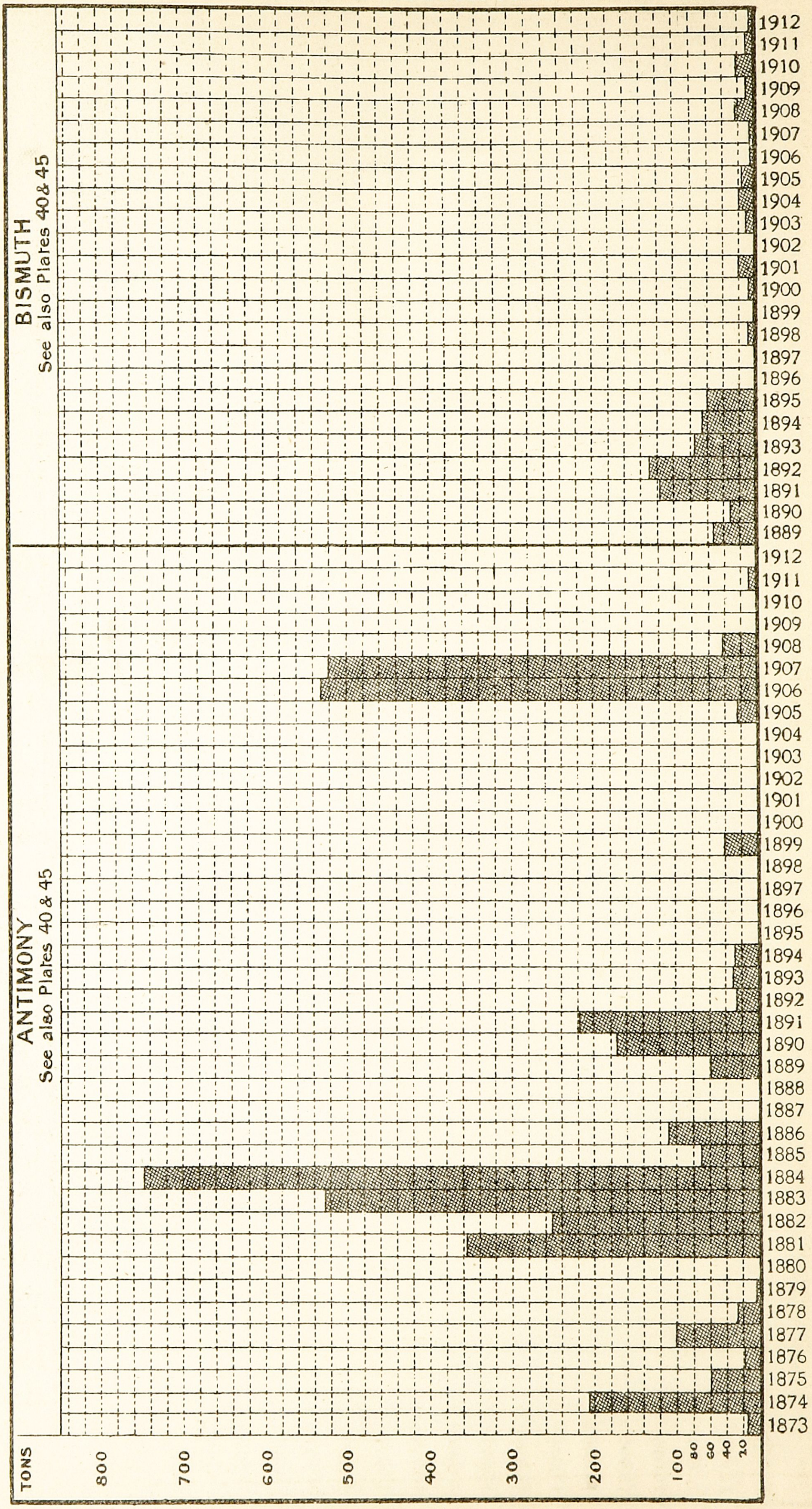
TIN PRODUCTION.



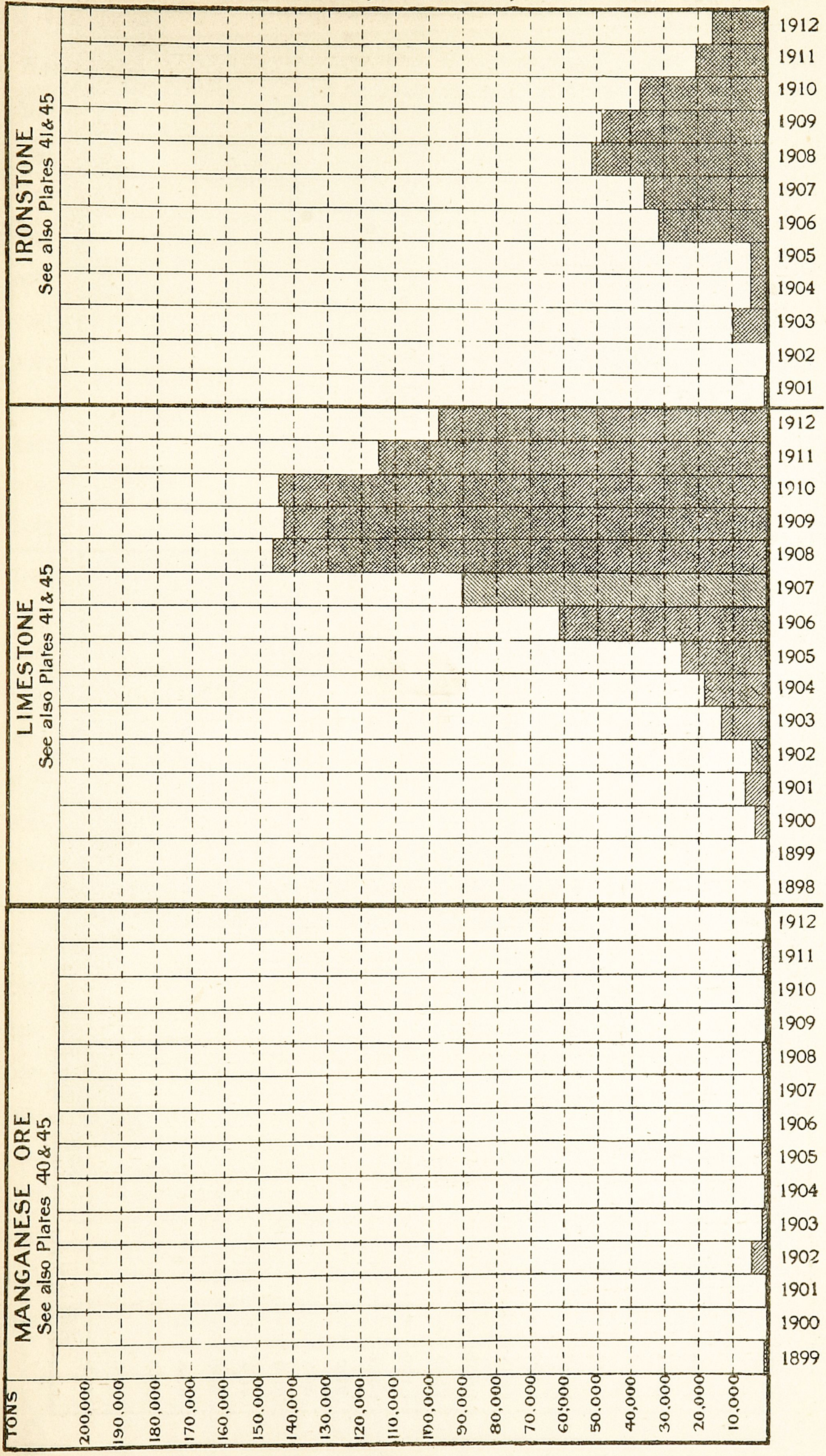
COPPER PRODUCTION

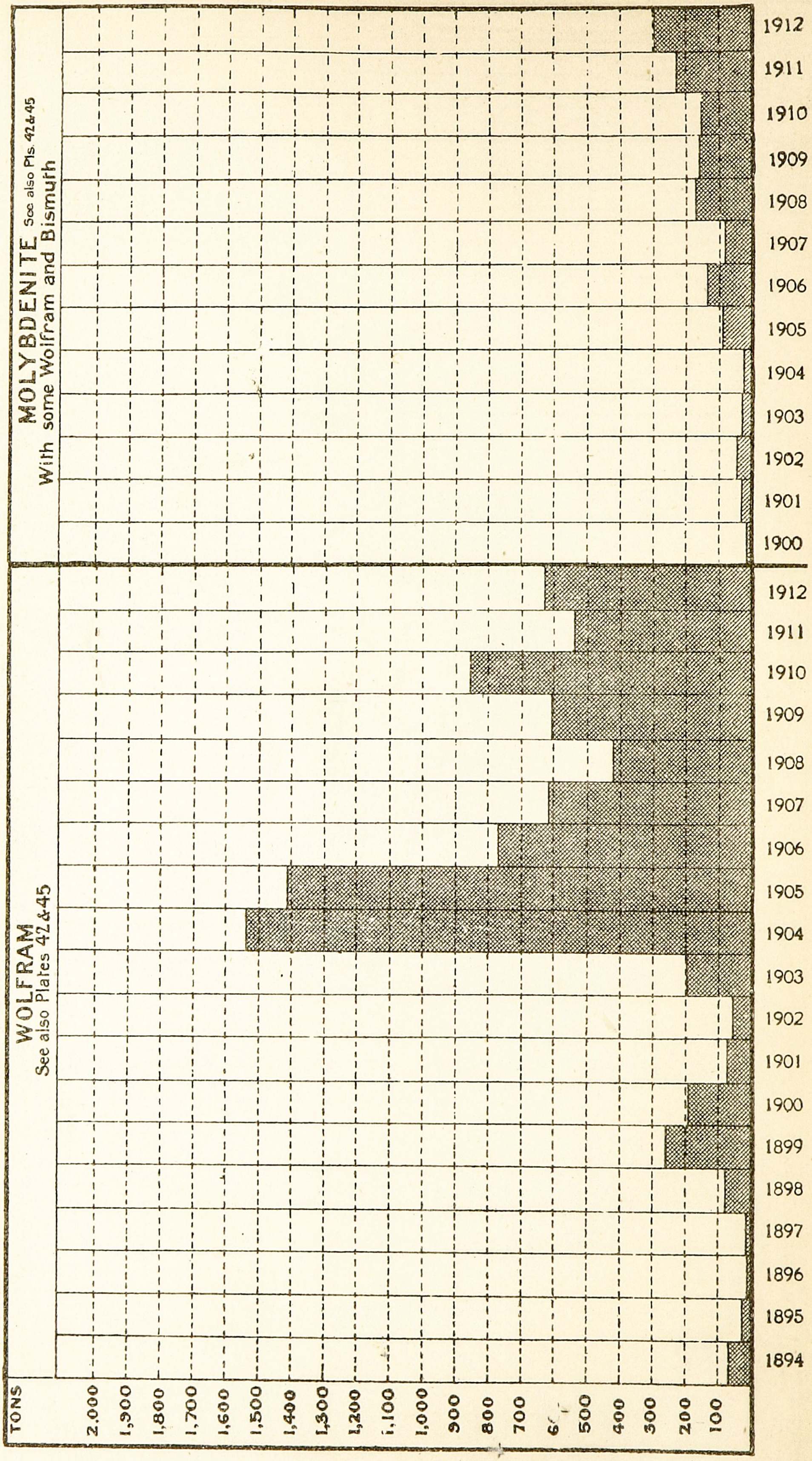


ANTIMONY & BISMUTH PRODUCTION.



MANGANESE, LIMESTONE, IRONSTONE.




MOLYBDENITE See also Pls. 42 & 45
With some Wolfram and Bismuth
WOLFRAM
See also Plates 42 & 45
TONS
2,000
1,900
1,800
1,700
1,600
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
1912
1911
1910
1909
1908
1907
1906
1905
1904
1903
1902
1901
1900
1912
1911
1910
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1908
1907
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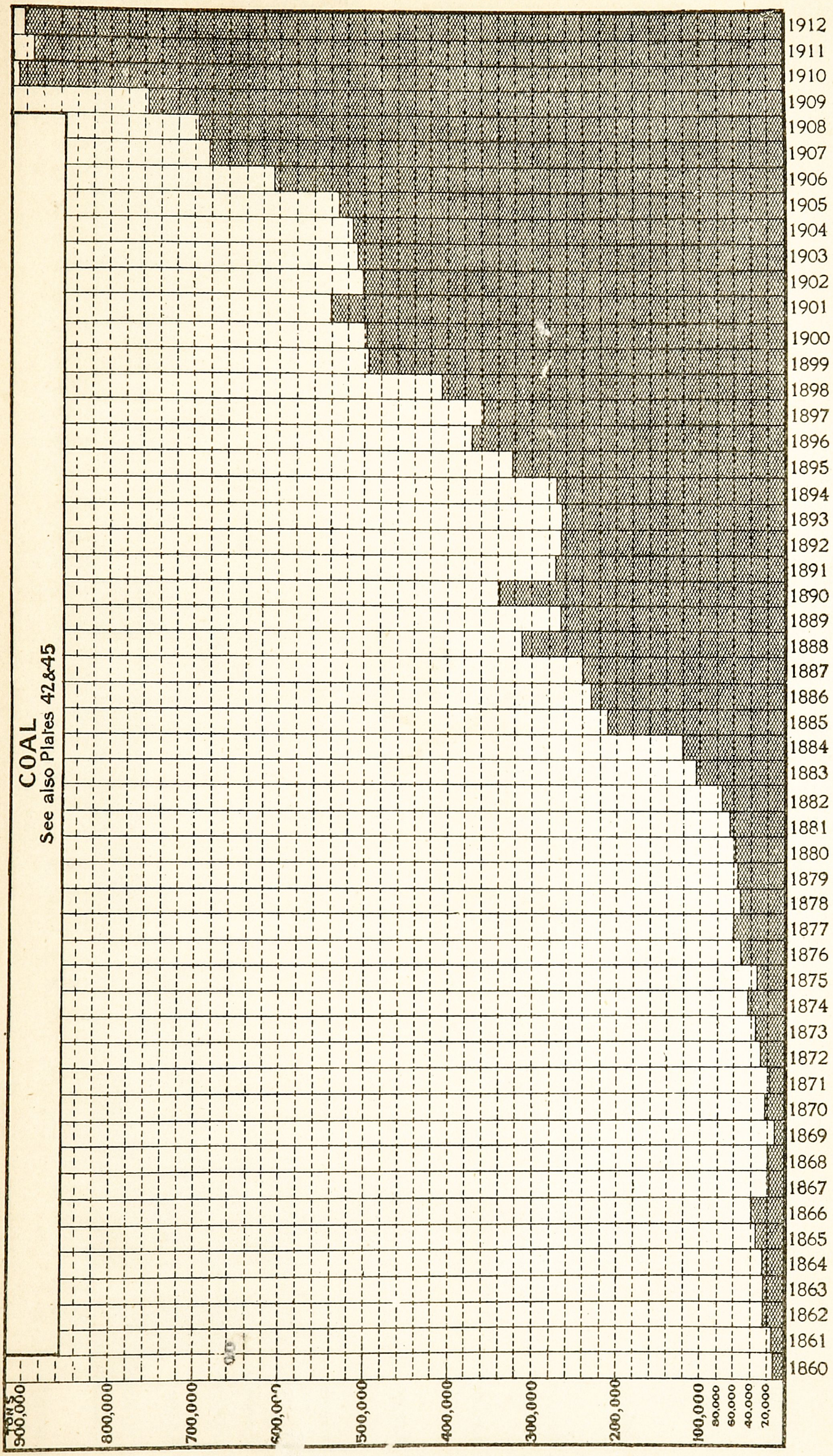
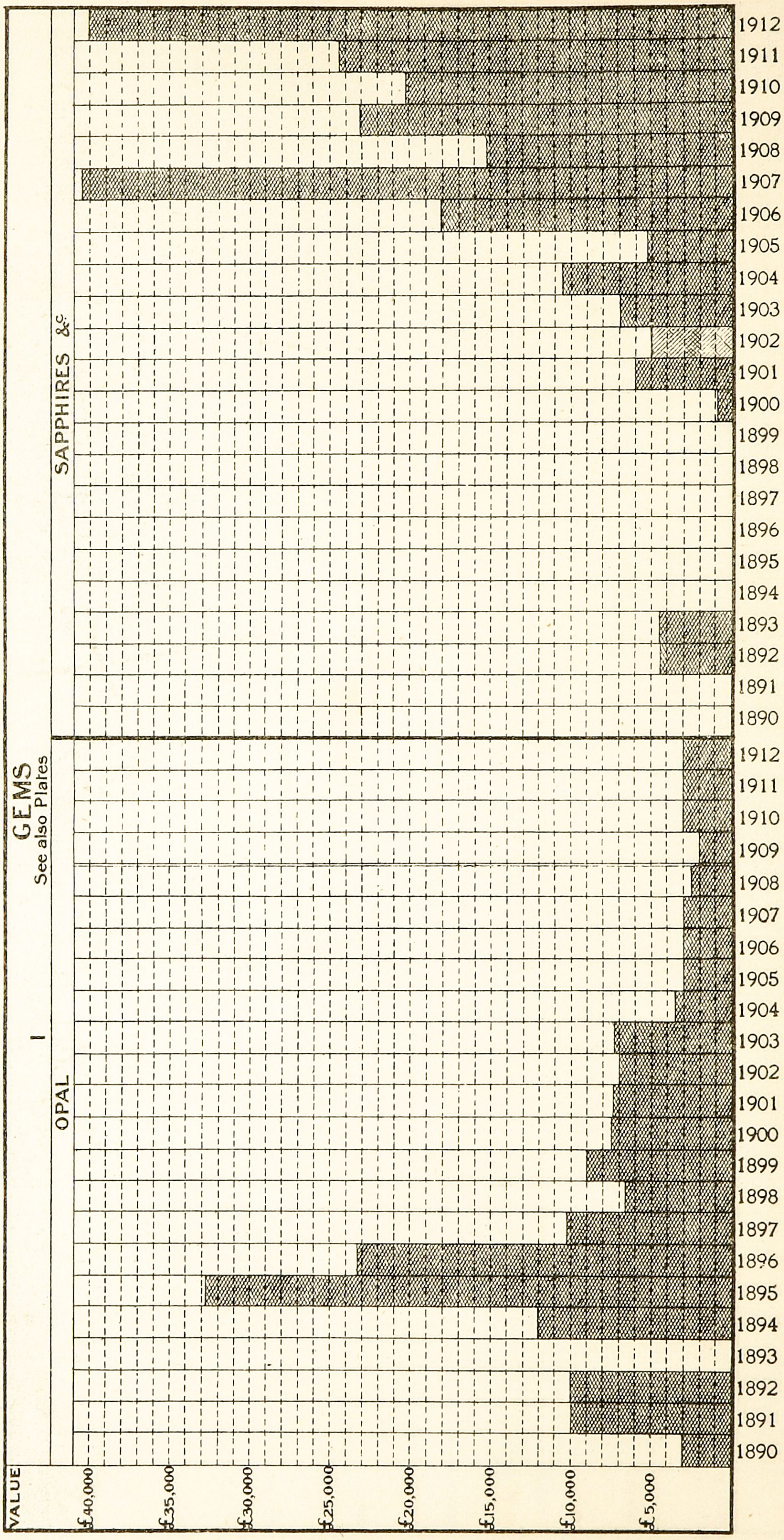
1905
1904
1903
1902
1901
1900
1899
1898
1897
1896
1895
1894

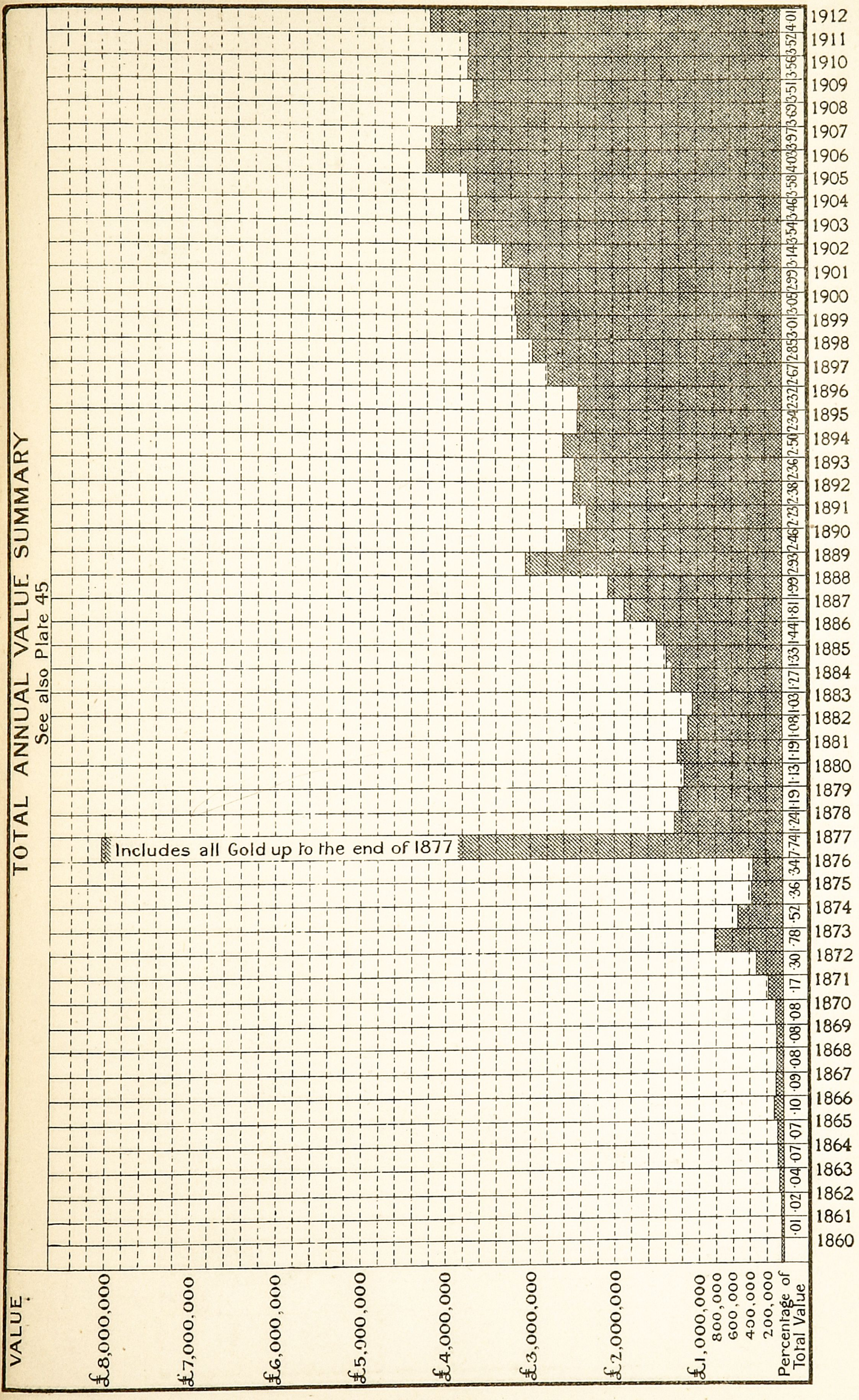
COAL PRODUCTION.



GEM PRODUCTION.

Plate 56.




TOTAL ANNUAL VALUE SUMMARY
See also Plate 45
Includes all Gold up to the end of 1877
VALUE
£8,000,000
£7,000,000
£6,000,000
£5,000,000
£4,000,000
£3,000,000
£2,000,000
£1,000,000
800,000
600,000
400,000
200,000
Percentage of Total Value
4·01
3·52
3·56
3·51
3·69
3·97
4·03
3·58
3·46
3·54
3·14
2·99
3·05
3·01
2·85
2·67
2·32
2·34
2·50
2·36
2·38
2·23
2·46
2·93
1·99
1·81
1·44
1·33
1·27
1·03
1·08
1·19
1·13
1·19
1·24
7·74
·34
·36
·52
·78
·30
·17
·08
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·08
·09
·10
·07
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·04
·02
·01
1912
1911
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1864
1863
1862
1861
1860

K.15
559.43
DUN